This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

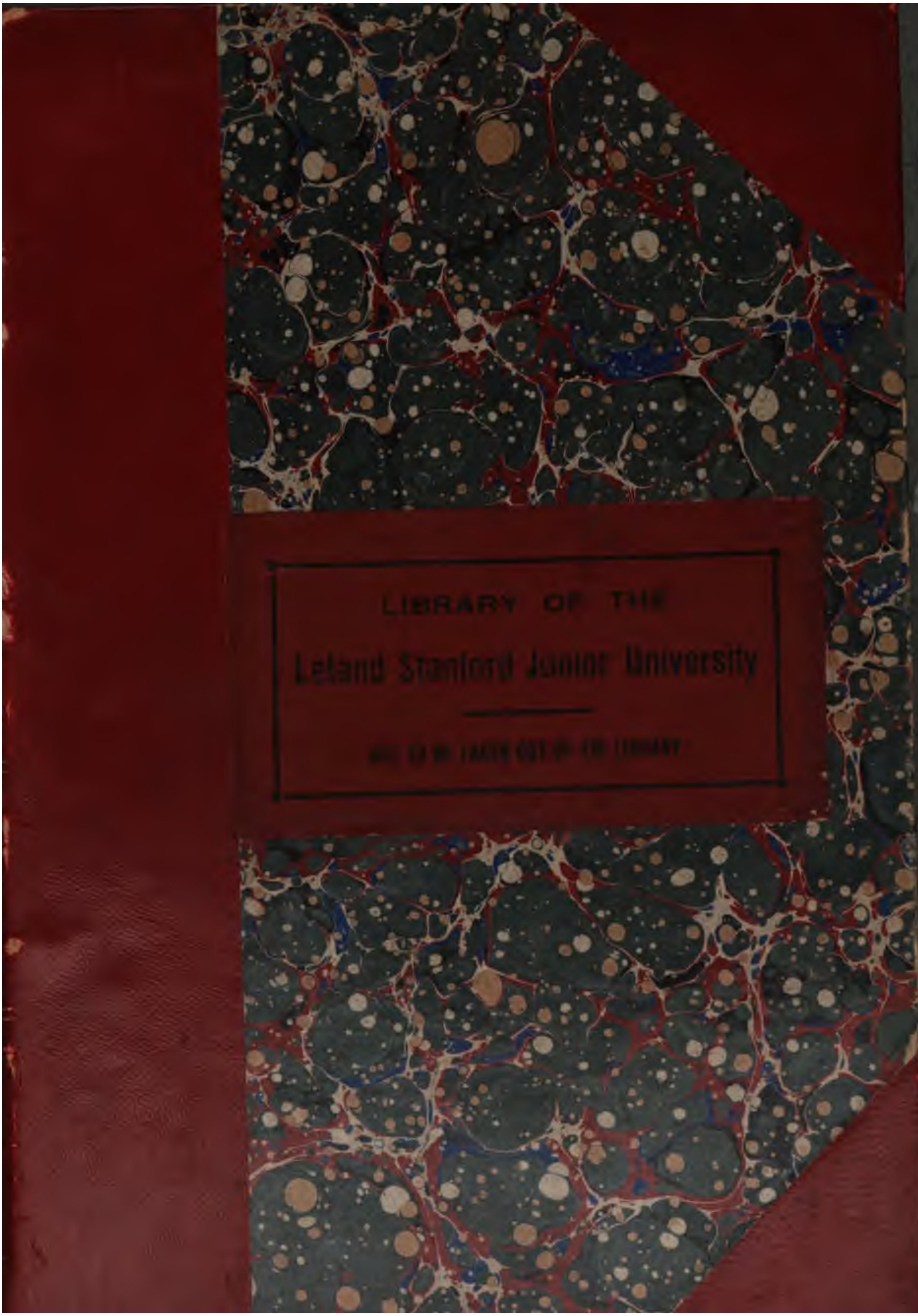
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



LIBRARY OF THE
Leland Stanford Junior University
NOT TO BE TAKEN OUT OF THE LIBRARY

UNIVERSITY OF NEW ZEALAND.

No. 1a

EXAMINATION PAPERS,

DECEMBER, 1893.

MATRICULATION: MEDICAL PRELIMINARY: JUNIOR SCHOLARSHIP:
BARRISTERS' AND SOLICITORS' GENERAL KNOWLEDGE.

EACH PAPER OCCUPIES THREE HOURS

WELLINGTON:
LYON & BLAIR.
1893.

LELAND STANFORD JUNIOR
LIBRARY
UNIVERSITY.

A. 19847.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION.—DECEMBER, 1893.

LATIN.

Examiner—G. S. SALE.

1. Decline, in the singular number only:—Iste, alter, uterque, quis (interrog.), tristis hiems, infelix opus, melior aetas.

Give the comparative and superlative degrees of facilis, liber, acer, benevolus.

Give the cardinals, ordinals, distributives and numeral adverbs, corresponding with the numbers Two, Five, Eighteen, Twenty-one, Twenty-two, Twenty-three.

2. Give the parts of caveo, sterno, uro, pario, spargo, curro, gigno.

Distinguish fixus and fictus, textus and tectus, vinctus and victus.

How are intransitive verbs used in the passive voice?

What cases are governed by the following verbs respectively:—vescor, credo, suadeo, careo, subvenio, nubo.

3. Translate into Latin:—

(1) I set out from Capua and came to Pompeii.

(2) There is no doubt that the cruel Verres bound and scourged Roman citizens.

(3) Caesar having landed his army sent forward some horse-soldiers to examine the camp of the enemy.

(4) On the side of the enemy 1200 were killed and more than 2000 were taken prisoners.

(5) It is manifest that what you say is true, and that there is no hope for us but in flight.

(6) I will help you if I can: but I fear that I can do nothing.

Note.—" to scourge," virgis caedere.
" to land," exponere.
" to examine," explorare.
" on-the-side-of," use a preposition.

[OVER

4. Translate:—

Prima luce hostium acies cernebatur. Labienus, milites cohortatus ut suae pristinae virtutis memoriam retinerent atque ipsum Caesarem praesentem adesse existimarent, dat signum proelii. Primo concursu ab dextro cornu, ubi septima legio constiterat, hostes pelluntur atque in fugam conjiciuntur; ab sinistro, quem locum duodecima legio tenebat, cum primi ordines hostium transfixi telis concidissent, tamen acerrime reliqui resistebant, nec dabat suspicionem fugae quisquam. Incerto nunc etiam exitu victoriae, cum septimae legionis tribunis esset nuntiatum quae in sinistro cornu gererentur, post tergum hostium legionem ostenderunt signaque intulerunt.

Parse constiterat, gererentur, intulerunt.

Explain the subjunctive gererentur.

5. For Medical Candidates only.

(*N.B.—Medical candidates must not omit* question 4.)

Nullum igitur vitium taetrius est, ut eo unde egressa est referat se oratio, quam avaritia, praesertim in principibus et rem publicam gubernantibus. Habere enim quaestui rem publicam non modo turpe est, sed sceleratum etiam et nefarium. Itaque quod Apollo Pythius oraculum dedit "Spartam nulla alia re nisi avaritia perituram," id videtur non solum Lacedaemoniis sed etiam omnibus opulentis populis praedixisse.

Explain the dative quaestui.

6. For Scholarship Candidates only.

(1) Distinguish aliquis, quisquam, quivis; quamquam, quamvis, licet; forte, forsitan, fortasse; terni, trini; non nemo, nemo non.

(2) How is the negative haud used in Ciceronian Latin? Explain the form necubi.

(3) Translate into Latin in as many ways as possible:— Four days after these events he left the city.

(4) Express in Latin:—

I leave that to you.
I don't know what he would have done.
To think that I should have been so cheated!
He stayed with me from the 10th to the 20th of December.

UNIVERSITY OF NEW ZEALAND.

Matriculation Examination—December, 1893.

GREEK.

Examiner: G. S. Sale.

---

1. Decline παῖς, γένος, πόλις, ναῦς, ὅστις, τοιοῦτος, οὐδείς.

Give the comparative and superlative degrees (nominative singular masculine only) of σοφός, καλός, μέγας, πολύς.

2. Write out the second aorist imperative passive of τύπτω, the present optative active of τιμάω, the present subjunctive active of δηλόω.

Parse ἵεσαν, ἔθεντο, στᾶσι, δυῖεν.

3. Give the first person singular of the principal tenses in use of βαίνω, ἔχω, ὁράω, ἔρχομαι, αἱρέω, γιγνώσκω, πίπτω.

4. What cases are governed by ἐπί, μετά, διά, εἰς, ἐκ, παρά, respectively?

Where more cases than one are used, distinguish the meanings.

5. Translate into Greek:—

Most men consider wealth and honour and glory the best things.

Those of the enemy who pursued fell into the ambush *(ἐνέδρα)*.

My son, may you be more fortunate than your father.

No one ever yet surpassed Socrates in virtue.

The men of that day honoured their country rather than themselves.

6. Translate:—

Ἀνήρ κατελείπετο διὰ τὸ μηκέτι δύνασθαι πορεύεσθαι. καὶ ἐγὼ τὸν μὲν ἄνδρα τοσοῦτον ἐγίγνωσκον ὅτι εἷς ἡμῶν εἴη· ἠνάγκασα δὲ σὲ τοῦτον ἄγειν, ὡς μὴ ἀπόλοιτο· καὶ γὰρ, ὡς ἐγὼ οἶμαι, πολέμιοι ἡμῖν ἐφείποντο. συνέφη τοῦτο ὁ ἄνθρωπος. Οὐκοῦν, ἔφη ὁ Ξενοφῶν, ἐπεὶ προύπεμψά σε, *καταλαμβάνω αὖθις σὺν τυῖς ὀπισθοφύλαξι προσιὼν βόθρον ὀρύττοντα ὡς κατορύξοντα τὸν ἄνθρωπον, καὶ ἐπιστὰς ἐπῄνουν σε. ἐπεὶ δὲ παρεστηκότων ἡμῶν συνέκαμψε τὸ σκέλος ἁνήρ, ἀνέκραγον οἱ παρόντες ὅτι ζῇ ἁνήρ, σὺ δ' εἶπας Ὁπόσα γε βούλεται· ὡς ἔγωγε αὐτὸν οὐκ ἄξω. ἐνταῦθα ἔπαισά σε· ἀληθῆ λέγεις· ἔδοξας γάρ μοι εἰδότι ἐοικέναι ὅτι ἔζη.*

Note.—*ὀπισθοφύλαξ*, rear-guard.
ὀρύττειν, to dig.
συγκάμπτειν, to bend.

Parse *ἀπόλοιτο, συνέφη, ἐπιστάς, ἐπῄνουν, εἰδότι.*

7. For Junior Scholarship Candidates only.

Express in Greek:—

(1) It is your duty to assist your friends.
(2) He denied having done it.
(3) He did not deny having done it.
(4) It is impossible that he should not have done it.
(5) Do not be guilty of such folly.
(6) So far from encouraging him, I did my best to prevent him from doing it.
(7) All who were in the ship landed safely.
(8) No man in his senses, much less a philosopher, would have uttered anything so foolish.

Give the Greek expressions for *num*, *nonne*, *at enim*, *utinam*, *quidni*.

UNIVERSITY OF NEW ZEALAND.

ENTRANCE EXAMINATION, 1893.

MATRICULATION PAPER.

ENGLISH.

Examiner—PROFESSOR THOMAS GILRAY, M.A.

(All the Questions are to be attempted.)

1. Mention and illustrate the different ways in which English Substantives form their Plurals. Give examples (1) of double Plurals; (2) of Plurals in appearance; and (3) of Substantives used only in the Plural.

2. Explain and illustrate the following statement:—"English was originally an inflected and unmixed language, but is now an uninflected and composite language."

3. Give a list of English Anomalous Verbs; and write notes on the history of some of the forms.

4. Classify Adverbs (1) according to their origin or formation; and (2) according to their meaning. Show, by giving a few examples, that the proper *placing* of Adverbs is of great importance in English composition.

5. Give the *general* analysis of the following passage; and parse the words in italics:—

> "*Stop* and consider! life is *but* a day;
> A fragile dewdrop on *its* perilous way
> From a *tree's* summit; a poor Indian's sleep
> *While* his boat hastens to the monstrous steep
> Of Montmorenci. Why so sad a moan?
> Life is the rose's hope while *yet* unblown;
> The *reading* of an *ever-changing* tale;
> The light uplifting of a maiden's veil;
> A pigeon tumbling in clear *summer* air;
> A laughing *school-boy*, without grief or care,
> Riding the springy branches of an elm."

[OVER

6. Re-write in correct English the following sentences (No remarks are asked for.):—

(1) "Admitting the agency of evil spirits, their tales are all equally credible."

(2) "She returned with one of the noted beauties of the county, and by whom we were gladly welcomed."

(3) "Mrs. Smith, presently a residenter in town, shall take in boarders during the school session, who she hopes to make mutual friends."

(4) "Adrian IV. was the only Englishman who ever sat in the papal chair."

(5) "Mr. Carlyle has taught that silence is golden in thirty volumes."

7. What is the difference between the Period and the Loose Sentence? What are the advantages and disadvantages of short and long sentences respectively; and what are the chief points to be attended to in sentence structure?

8. Write an abridgment of the following Scene (Study brevity; but do not omit anything essential to clearness.):—

"SCENE V. *Another part of the field.*

Alarum. Enter Richard *and* Richmond; *they fight.* Richard *is slain. Retreat and flourish. Re-enter* Richmond, Derby *bearing the crown, with divers other Lords.*

Richm. God and your arms be praised, victorious friends;
The day is ours, the bloody dog is dead.
Der. Courageous Richmond, well hast thou acquit thee.
Lo, here, this long-usurped royalty
From the dead temples of this bloody wretch
Have I pluck'd off, to grace thy brows withal:
Wear it, enjoy it, and make much of it.
Richm. Great God of heaven, say Amen to all!
But, tell me, is young George Stanley living?
Der. He is, my lord, and safe in Leicester town;
Whither, if it please you, we may now withdraw us.
Richm. What men of name are slain on either side?
Der. John Duke of Norfolk, Walter Lord Ferrers,
Sir Robert Brakenbury, and Sir William Brandon.

Richm. Inter their bodies as becomes their births:
Proclaim a pardon to the soldiers fled
That in submission will return to us:
And then, as we have ta'en the sacrament,
We will unite the white rose and the red.
Smile heaven upon this fair conjunction,
That long have frown'd upon their enmity!
What traitor hears me, and says not amen?
England hath long been mad, and scarr'd herself;
The brother blindly shed the brother's blood,
The father rashly slaughter'd his own son,
The son, compell'd, been butcher to the sire:
All this divided York and Lancaster,
Divided in their dire division,
O, now, let Richmond and Elizabeth,
The true succeeders of each royal house,
By God's fair ordinance conjoin together!
And let their heirs, God, if Thy will be so,
Enrich the time to come with smooth-faced peace,
With smiling plenty and fair prosperous days!
Abate the edge of traitors, gracious Lord,
That would reduce these bloody days again,
And make poor England weep in streams of blood!
Let them not live to taste this land's increase
That would with treason wound this fair land's peace!
Now civil wounds are stopp'd, peace lives again:
That she may long live here, God say amen!"

9. Write an Essay on *one* of the following subjects (Attend carefully to expression, pointing, and neatness of form.):—

(1) Conversation.

(2) Society and Solitude.

(3) Plot of any novel with which you are familiar.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, 1893.

FRENCH.

Examiner—W. MICHELL CLARKE, M.A.

(You are requested to send up each section separately.)

A.

1. Give the feminine corresponding to the masculine substantives :—le dieu, l'empereur, le héros, le roi, le baron, le paysan, l'hôte, l'âne, le neveu.

2. What is the gender of substantives ending in -age? Are there any exceptions to your rule?

3. Write down the adverbs which form their comparative and superlative irregularly in French.

4. Write the 1st person plural of the present of the indicative and of the subjunctive of the verbs—acquérir, venir, pourvoir, pouvoir, savoir, craindre, écrire, naître, vivre.

5. Explain, with examples, the use of the absolute superlative in French.

6. Explain the grammatical reasons which require the use of the subjunctive in the following phrases, and give a reason for each tense used :—

(1) Il a peur que je ne le punisse.

(2) C'est le seul parti que vous ayez à prendre.

(3) Avant qu'il paraisse, je l'entends.

(4) Croyez-vous qu'il pleuve?

(5) Je ne supposais pas qu'il fût parti.

7. Give the general rule for the agreement of past participles. Quote *two* examples.

8. When is the definite article suppressed in French although employed in English?

9. Express in French :—Where are your books? Show them to me. On the 15th of December. On reading your translation, I discover many blunders. When do you generally rise? He longs to see England. My head aches. My father is pretty well. He was near dying with fear. I must show you my new watch. He was looking out of window when I passed. I hear somebody coming up-stairs.

B.

Translate into English :—

(1) Le vol est l'état naturel, je dirais presque l'état nécessaire de l'hirondelle. Elle mange en volant, elle boit en volant, se baigne en volant, et quelquefois donne à manger à ses petits en volant. Elle sent que l'air est son domaine ; elle en parcourt toutes les dimensions et dans tous les sens, comme pour en jouir dans tous les détails, et le plaisir de cette jouissance se marque par de petits cris de gaieté. Tantôt elle donne la chasse aux insectes voltigeants, et suit avec une agilité souple leur trace oblique et tortueuse ; tantôt elle rase légèrement la surface de la terre, pour saisir ceux que la pluie ou la fraîcheur y rassemble ; tantôt elle échappe elle-même à l'impétuosité de l'oiseau de proie par la flexibilité preste de ses mouvements ; toujours maîtresse de son vol dans sa plus grande vitesse, elle en change à tout instant la direction ; elle semble décrire au milieu des airs un dédale mobile et fugitif, dont les routes se croisent, s'entrelacent, se fuient, se rapprochent, se heurtent, se roulent, montent, descendent, se perdent et reparaissent pour se croiser, se rebrouiller encore en mille manières, et dont le plan, trop compliqué pour être représenté aux yeux par l'art du dessin, peut à peine être indiqué à l'imagination par le pinceau de la parole.

(2) Près du rouet de sa fille chérie
Le vieux sergent se distrait de ses maux,
Et, d'une main que la balle a meurtrie,
Berce en riant deux petits-fils jumeaux
Assis tranquille au seuil du toit champêtre,
Son seul refuge après tant de combats,
Il dit parfois : " Ce n'est pas tout de naître ;
" Dieu, mes enfants, vous donne un beau trépas ! "

C.

Translate into French :—

" You come, sir, from these unfortunate people," said the Duke of Monmouth, " and your name, I believe, is Morton ; will you favour us with the purport of your errand ? "

" It is contained, my Lord," answered Morton, " in a paper, termed a Remonstrance and Supplication, which my Lord Evandale has placed, I presume, in your Grace's hands ? "

" He has done so, sir," answered the Duke ; " and I understand, from Lord Evandale, that Mr. Morton has behaved in these unhappy matters with much temperance and generosity, for which I have to request his acceptance of my thanks."

Here Morton observed Dalzell shake his head indignantly, and whisper something into Claverhouse's ear, who smiled in return, and elevated his eyebrows, but in a degree so slight as scarce to be perceptible.

D.

(For Junior Scholarship Candidates only.)

1. Give the rules for the formation of the plural of compound nouns, and write the plural of the following words :—le chef d'œuvre, un arc-en-ciel, un tête-à-tête un on-dit, un garde-feu, un entresol, un fourmi-liou.

2. Express in French :—It is all over with his hopes. It shall not be my fault if you are not rewarded. I wish I could do it. He is a bit of a miser. You had but just gone out. He had just taken it.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, 1893.

GERMAN.

(Examiner :—W. MICHELL CLARKE, M.A.)

(You are requested to send up each section separately.)

A.

1. Give the gender and plural of :—Soldat, Kenntnis, Jahr, Gesell, Gewicht, Maus, Auge, Dank, Rat, Strahl, Garten, Wunder.

2. Give the rules for the declension of adjectives immediately preceding substantives :—(1) with the definite article (2) with the indefinite article (3) without article. Give one example in each case.

3. What cases do the following prepositions govern :—neben, über, zu, gegen, wider, an? Give examples.

4. How is the preposition "to" translated before proper nouns of place and of person? They went to Australia, they went to the king.

5. Give the Infinitive, 1st person singular past indicative, and 3rd person singular present Indicative of :—gekannt, geworden, gegangen, gefragt, gewesen, geschmolzen, geflohen, gebissen.

6. Give the two forms of the Superlative in German. Explain with examples the difference in their meaning.

7. What do you mean by an inverted sentence? Give examples of inverted sentences in German.

8. Give the Comparative of :—hoch, nahe, grosz, viel, gut, bald.

9. Express in German :—Come in. In the month of December. Him once the people named the Wise. All good things are three. I have not seen him for the last three years. You have seen her grow up among you. Have you slept well? Let us go and order a carriage for this evening. How is your brother? Do you think it will be wet to-morrow? It is raining already. Shut the window, if you please; there is a draught.

B.

Translate into English :—

1. Der Wolf lag in den letzten Zügen und schickte einen prüfenden Blick auf sein vergangenes Leben zurück. Ich bin freilich ein Sünder, sagte er; aber doch, hoffe ich, keiner von den gröszten. Ich habe Böses gethan; aber auch viel Gutes. Einsmals, erinnere ich mich,

kam mir ein blöckendes Lamm, welches sich von der Heerde verirret hatte, so nahe, dasz ich es gar leicht hätte würgen können; und ich that ihm nichts Zu eben dieser Zeit hörte ich die Spöttereien und Schmähungen eines Schafes mit der bewundernswürdigsten Gleichgültigkeit an, ob ich schon keine schützende Hunde zu fürchten hatte.

Und das alles kann ich dir bezeugen; fiel ihm Freund Fuchs, der ihn zum Tode bereiten half, ins Wort. Denn ich erinnere mich noch gar wohl aller Umstände dabei Es war zu eben jener Zeit, als du dich an dem Beine so jämmerlich würgtest, das dir der gutherzige Kranich aus dem Schlunde zog.

2. Ich lebte still und harmlos—das Geschosz
War auf des Waldes Thiere nur gerichtet,
Meine Gedanken waren rein von Mord—
Du hast aus meinem Frieden mich heraus
Geschreckt, in gährend Drachengift hast du
Die Milch der frommen Denkart mir verwandelt;
Zum Ungeheuren hast du mich gewöhnt—
Wer sich des Kindes Haupt zum Ziele setzte,
Der kann auch treffen in das Herz des Feinds.

C.

Translate into German:—

Diogenes was walking about with his lantern on the public square at Athens in broad daylight. He was asked why he carried a light. I am seeking a man, he said. What do you mean? said some one. I see around me, he replied, only creatures who follow their passions and their desires instead of consulting their reason, and I cannot but take them for animals disguised in human shape. You are not very polite, some one objected. That is my way, he replied, turning his back on his questioners.

D.

(For Junior Scholarship Candidates only.)

1. Decline the relative pronouns: wer, der, and welcher; and state their uses. In what instances must we use the respective forms of der instead of those of welcher?

2. Express in German:—About ten dollars. On the spot. Since that time I have learned to think quite differently of the Empire. He must have done it. He ought to have done it.

NEW ZEALAND UNIVERSITY.

MATRICULATION EXAMINATION.

ARITHMETIC.

PROFESSOR GIBBONS.

1. Write down in words the sum and difference of thirteen millions seven hundred and twenty-five thousand eight hundred and nineteen, and seven millions twenty-eight thousand and fifty-nine.

2. Simplify— $\dfrac{1\frac{1}{2}+\frac{23}{30}}{1\frac{1}{2}-\frac{13}{20}} \div \dfrac{\frac{1}{3}+\frac{1}{5}}{\frac{1}{6}-\frac{1}{10}}$

3. Reduce to a vulgar fraction—

$$\frac{27\cdot 85}{\cdot 086\overline{025}}$$

and find the value to four places of decimals of the product of $2\cdot\dot{3}0\dot{3}$ and $4\cdot\dot{2}\dot{4}$.

4. Find the value, correct to a penny, of (1·3+2·47+·025) of a pound + (1·36+2·625) of a shilling.

5. Extract the square root of ·00249001.

6. Find, to the nearest penny, the amount of £500 in four years at 4½ per cent. compound interest.

7. A person holding 75 shares in a railway paying a dividend of £11 a share, sells out at 192, paying a brokerage of a half per cent.: what difference will it make in his income if he invests in New Zealand 3½ per cent. stock at 96?

8. A pound weight of gold was coined into 45 guineas worth 20¾ shillings each: find the value of an ounce of gold in ounces of silver to four decimal places, when the pound of silver is coined into 66 shillings.

9. What was the rateable value of a district, when a rate of 2s 8d in the pound realised £1075 4s net, supposing the cost of collection to be 4 per cent. on the gross amount levied?

10. A sum of £30 10s 8d is divided among 73 children, 81 women, and 63 men, so that four women receive as much as three men, and seven children as much as three women: find the share of each.

11. Find the number of gallons of rain which fall on an acre in the course of a year, when the average rainfall per week is ·55 inches. A cubic foot of water weighs 1000 ounces, and a gallon of water weighs 10lbs.

12. A newspaper of Friday, January 1st, 1892, is numbered 7545; it is published every day except Sundays, Christmas Day, and Good Friday: find the number of the paper published on the 30th of December.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION.—1893.

ALGEBRA.

Examiner: W. STEADMAN ALDIS.

---

1. Find the values of $a^3 - b^3$; $(a - b)(a^2 + ab + b^2)$; $(a - b)^3 + 3ab(a - b)$; and $(a + b)^3 - 3ab(a + b) - 2b^3$;
(1) when $a = 3, b = 1$; (2) when $a = 5, b = 3$.

2 Show that $(x - a)(x - b) = x^2 - (a + b)x + ab$; and resolve into factors (1) $x^2 - 11x + 18$; (2) $(a^2 + b^2 - c^2)^2 - 4a^2b^2$.

3. State the rule for finding the Highest Common Factor of two algebraical expressions. Find that of $x^3 + 4x^2 - 8x + 24$ and $x^4 - x^3 + 8x - 8$.

4. Explain what is meant by the multiplication of fractions, and from the meaning deduce that $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$

5. Simplify :—

$$(1)\ \frac{1}{2x + y} + \frac{1}{2x - y} + \frac{3x}{y^2 - 4x^2}$$

$$(2)\ \frac{(x - a)(y - a)}{(a - b)(a - c)} + \frac{(x - b)(y - b)}{(b - a)(b - c)} + \frac{(x - c)(y - c)}{(c - a)(c - b)}$$

6. State the axioms which are used in solving an algebraical equation. Point out in which steps you use each, in the solution of the equation :

$$\frac{x - 1}{5} - \frac{3x - 1}{8} = \frac{43 - 5x}{6}.$$

7. Simplify :—

$$\frac{1}{(x - 3)(x - 2)} - \frac{x - 4}{(x - 1)(x - 3)} + \frac{x - 3}{(x - 1)(x - 2)}$$

and show that $x(y + z)^2 + y(z + x)^2 + z(x + y)^2 - 4xyz = (y + z)(z + x)(x + y)$

8. A debtor is just able to pay his creditors five shillings in the pound; but if his assets had been five times as great, and his debts two-thirds of what they really were, he would have had a balance in his favour of £140. How much did he owe?

9. If the numerator of a certain fraction be increased by 1, and the denominator diminished by 1, it becomes unity. If the numerator be increased by the denominator and the denominator diminished by the numerator, its value will be 4. Find the fraction.

10. A and B can do a certain piece of work in 30 days, working together. After 12 days B is called off, and A finished it by himself in 24 days more. How long would each take to do the work alone?

UNIVERSITY OF NEW ZEALAND

MATRICULATION EXAMINATION, 1893.

EUCLID.

(Examiner—C. H. H. Cook.)

1. Define a *right angle*, a *plane surface*, *parallel straight lines*, a *quadrilateral*, a *parallelogram*, a *rectangle*.

2. Cite the propositions in which Euclid proves that under given conditions triangles are equal in all respects.

If two triangles have two sides of the one equal to two sides of the other each to each, and an angle of one equal to an angle of the other, *viz.*, those angles equal which are opposite to equal sides in the two triangles: are the triangles necessarily equal in all respects? If not, what is the alternative?

3. Prove that parallelograms on the same base and between the same parallels are equal in area.

4. Show how to describe a square on a given finite straight line.

If two straight lines are equal, prove that the areas of the squares described on them are equal.

5. If the square described on one side of a triangle is equal to the sum of the squares on the other sides, prove that the angle contained by these sides is a right angle.

6. Show that any straight line drawn through the point in which the diagonals of a parallelogram intersect one another, and terminated by two opposite sides of the parallelogram, divides the parallelogram into two equal parts.

7. If a straight line be divided into any two parts, the squares on the whole line and one of the parts are together equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

8. Show how to divide a given straight line into two parts, such that the rectangle contained by the whole and one part may be equal to the square on the other part.

[TURN OVER

9. Show how to describe a square whose area is equal to the difference of the area of two given squares.

Candidates for the Medical Preliminary examination are to omit questions 4 and 9, and take in place of them the following:—

10. Define a *tangent* to a circle.

Show how to draw two tangents to a circle from a given external point, and prove that they are equal to one another.

11. Prove that the opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

Also state and prove the converse of this proposition.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, 1893.

HISTORY.

Examiner: T. SHAILER WESTON, M.A.

(Candidates are expected to attempt all the questions.)

1. What are the chief provisions of the Bill of Rights and Act of Settlement? Why did these two Acts constitute a fresh starting point in English History?

2. What do you know of,—

   (a) The Darien Scheme.
   (b) The South Sea Bubble.

3. Sketch briefly the career and character of Marlborough.

4. What events are connected with the following places—*(a)* Fontenoy, *(b)* Culloden Moor, *(c)* Quebec, *(d)* Plassey, *(e)* St. Vincent, *(f)* Gibraltar.

5. What were the causes of the American War of Independence?

6. What events in English History are associated with the following names,—*(a)* Brindley, *(b)* Arkwright, *(c)* Adam Smith, *(d)* Burke, *(e)* Wilberforce.

7. Give an account of the rise of the Methodists.

8. Sketch briefly the chief events of the Peninsular War.

9. When and how did England, Scotland, and Ireland become one Kingdom with one Parliament?

UNIVERSITY OF NEW ZEALAND.

ENTRANCE EXAMINATION—1893.

MATRICULATION PAPER.

GEOGRAPHY.

Examiner—T. R. FLEMING, M.A., LL.B.

Attempt all the Questions.

1. Explain the following terms:—Tropic, volcano, solfatara, moraine, cañon, cyclone, meridian, solstice, equinox, Mercator's projection.
2. Give the causes of the distinction between insular and continental climates. Show why isothermal lines do not correspond with parallels of latitude.
3. Write a brief note on the general character and position of each of the following:—Pretoria, Bahia, Sargasso Sea, Hull, Bechuanaland, Buenos Ayres, Ruwenzori, Hamburg, Vancouver, and Toronto.
4. Describe the position and character of the plains of the New World, and of five plateaux of the Old World.
5. Write a few notes on the Indo-Chinese Peninsula, under the following heads:—(*a*) Divisions, (*b*) Chief towns and rivers, (*c*) Climate, (*d*) Productions.
6. What are the main causes of currents in the ocean? Name the chief currents of the Pacific Ocean, giving the direction of each.
7. What goods are exchanged between Great Britain and each of the following countries? — Russia, Mexico, Brazil, China, and Western Africa.
8. Name and locate the British possessions in the New World.
9. Where are the following, and for what are they noted in history?— Candahar, Kars, Cadiz, Souakin, Watling Island, Hyderabad, Saratoga, Alexandria, Charleston, Londonderry,
10. Draw a map of Australasia, and mark clearly the following only: The political divisions, three towns in each colony, the position of the leading products, the chief islands, and the chief lines of communication between Australia and New Zealand.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, 1893.

PHYSICS.

Examiner—PROFESSOR SHAND.

1. What is a thermometer? Describe the mercury thermometer, and explain how it is graduated. Adapt the following statement to the Fahrenheit scale of temperature:—Mercury freezes at — 40° C., and the range from its freezing to its boiling point is 398° C.

2. What is meant by the coefficient of linear expansion of a substance? Taking the coefficient of expansion of iron as ·000012 per degree centigrade, find the expansion produced in a telegraph wire 230 miles long by a rise of temperature of 50° F.

3. A pound of ice is taken at 0° C., and heated until it is converted into steam under the normal atmospheric pressure. Describe the changes in its state and volume that successively take place, and calculate the whole quantity of heat which it has absorbed.

4. Explain why in clear summer weather the land is hotter during the day and colder during the night than the adjacent sea. Show how this accounts for "land and sea breezes."

5. Explain the manner in which sound is transmitted through the air. How is the velocity of transmission affected by temperature? What is the physical distinction between a high and a bass note, and between a loud and a feeble note?

6. Describe and explain the use of the shadow photometer.

7. Draw a neat diagram illustrating the formation of the image when a double-convex lens is used as a magnifying glass. When the object is placed 2 inches from the lens, an erect image is seen magnified four times; what is the focal length of the lens?

8. Distinguish between a magnet and a magnetic substance. State what occurs when the pole of a magnet is placed near one end of a bar of soft iron; and make a sketch showing the direction of the lines of magnetic force.

[OVER.

9. A needle is inserted, point outwards, in one end of an insulated metal cylinder, and a glass rod strongly excited by rubbing with silk is placed (1) near to and facing the point of the needle, (2) near to the end remote from the needle. Explain the electrical condition of the cylinder in each experiment after the rod has been removed.

10. Describe Oersted's experiment, and quote Ampère's rule.

11. Taking the E.M.F. of a bichromate cell as 2 volts, and its internal resistance as ¼ ohm, find how many such cells would be required to give a current of ·4 ampere through an external resistance of 57 ohms.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, 1893.

CHEMISTRY.

Examiner: PROFESSOR F. D. BROWN.

1. Mention several methods of obtaining hydrogen gas from water, and write down the corresponding equations. How would you verify the statement that nine parts of water contain one part of hydrogen.

2. You are desired to prepare some chlorine gas, and to make experiments illustrative of its bleaching power. Describe in detail how you would proceed.

3. Find the approximate volume, at normal temperature and pressure, of 20 grams of carbon monoxide.

1 litre of hydrogen at 0° and 760^{mm} weighs ·0896 grams.

4. Give an account of the process by which anyone of the common acids is obtained on a manufacturing scale.

5. Calculate the percentage composition of sulphuric acid, and mention any tests by which you could ascertain the presence of this substance in a given solution.

6. Describe the physical and chemical properties of ammonia.

7. Write a short account of the properties and methods of preparation of nitrous oxide, nitric oxide, and nitric peroxide. Give the formulæ of these substances, and state the volume of oxygen contained in one litre of each of them.

8. Arrange the non-metallic elements in groups, according to their atomic value (valency).

9. What is red phosphorus, and how is it obtained? Compare the properties of this substance with those of ordinary phosphorus.

NEW ZEALAND UNIVERSITY.

MATRICULATION EXAMINATION.

MECHANICS.

PROFESSOR GIBBONS.

1. Enunciate the parallelogram of forces.

A weight of 60lbs. is supported by two strings, each inclined to the vertical at an angle of 45° : find the tension of each string.

2. Find the resultant of two like parallel forces.

A uniform rigid horizontal bar, 12 feet long, weighing 24lbs., has a weight of 12lbs. suspended from its middle point, and weights of 8lbs. and 16lbs. suspended from either end : find the force required to support it, and where it must be applied.

3. What is meant by the centre of gravity of a body?

A square has an isosceles triangle cut out of it, having one side of the square as base, and the vertex at the centre of the square : find the centre of gravity of the remaining figure.

4. What is meant by mechanical advantage?

In the wheel and axle find the radius of the axle, when that of the wheel is 2 feet and the mechanical advantage 4.

5. Define uniform velocity, and uniform acceleration.

Sound travels at the rate of 1320 feet a second : compare that with the velocity of an express train travelling uniformly 75 miles in 90 minutes.

6. Find the distance traversed in a given time by a particle moving in a straight line from rest with uniform acceleration.

A body starting from rest, under a constant acceleration, is observed to pass over 108 feet in 3 seconds : find the acceleration.

7. A cannon ball, weighing half a ton, is moving with a velocity of 30 miles a minute : find the work in foot pounds it is capable of doing.

8. A stone is thrown with a velocity of 22 feet a second from a train at right angles to its direction of motion, while the train is going at 30 miles an hour : find the initial velocity of the stone relative to the ground.

9. Define specific gravity. Find the specific gravity of a mixture of given volumes of two fluids whose specific gravities are given.

The specific gravity of alcohol is ·8 : find the specific gravity of a mixture of a pint of water, and one-fifth of a pint of alcohol.

10. Explain the action of the barometer.

UNIVERSITY OF NEW ZEALAND.

MATRICULATION EXAMINATION, DECEMBER, 1893

ELEMENTARY BIOLOGY.

Examiner: PROFESSOR A. P. W. THOMAS.

(Candidates must answer questions in one subject only.)

ANIMAL PHYSIOLOGY.

1. How is the upright position of the body maintained, and what organs are concerned in the action?

2. What is the composition of the blood? What differences do we find in the blood in (*a*) the aorta, (*b*) the pulmonary artery, (*c*) the portal vein?

3. What is lymph? Give an account of the arrangement of the lymphatics, and explain their functions.

4. Give an account of the process of digestion. What do you understand by the digestive ferments, and why are they required in the process of digestion?

5. How is the voice produced, and what is the difference between the voice and speech?

6. What do you understand by a gland, and what is the usual structure of glands? Distinguish between excretion and secretion.

7. Give an account of the general structure of the brain and spinal cord. What are the chief functions of the brain?

8. Give an accurate account of the structure and functions of the skin. What organs are concerned in the sense of touch?

[OVER.]

BOTANY.

1. What are the distinguishing characters of roots? What are the various functions of the roots? Distinguish between roots and root-hairs.

2. Describe the form and structure of some particular simple leaf which you know well. Show how other forms of leaves might be derived from it by the modification of some part or parts of it. What are compound leaves, and how would you distinguish between a shoot and a compound leaf?

3. What are the "veins" of plants, and how are they arranged in the leaf? What is their microscopic structure?

4. What is the composition of starch and sugar, and in what parts of the plant may they be found? What important relation have they to the growth and nutrition of the plant? How would you prove the presence of starch in a plant?

5. What is the nature of the seed, and how does a seed differ from a fruit? Describe the structure of (*a*) any seed with endosperm, (*b*) one without endosperm. What conditions are necessary for the germination of the seed?

6. What is transpiration, and how does it take place? Explain how it is related to the life of the plant.

7. What is an inflorescence? Describe the most important forms of inflorescence, and mention those which are characteristic of large natural groups of plants.

8. Give an account of the flower and fruit of plants belonging respectively to the Irideæ, Gramineæ, Compositæ, and Ranunculaceæ.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

LATIN.

Examiner—G. S. SALE.

I. Translate, adding short grammatical notes where necessary:—

1. Quae memor ipsa sui, postquam crudelibus aris
Admota est, sensitque sibi fera sacra parari;
Utque Neoptolemum stantem, ferrumque tenentem,
Inque suo vidit figentem lumina vultu;
Utere jamdudum generoso sanguine, dixit;
Nulla mora est. At tu jugulo vel pectore telum
Conde meo: jugulumque simul pectusque retexit.
Scilicet aut ulli servire Polyxena ferrem,
Aut per tale sacrum numen placabitur ullum.
Mors tantum vellem matrem mea fallere posset.
Mater obest, minuitque necis mihi gaudia; quamvis
Non mea mors illi, verum sua vita gemenda est.
Vos modo, ne Stygios adeam non libera manes,
Este procul, si justa peto, tactuque viriles
Virgineo removete manus: acceptior illi,
Quisquis is est, quem caede mea placare paratis,
Liber erit sanguis. Si quos tamen ultima nostri
Vota movent oris: Priami vos filia regis,
Non captiva, rogat: genetrici corpus inemptum
Reddite, neve auro redimat jus triste sepulchri.

2. (The Romans defend themselves on the Capitol; the rest of the city being in the hands of the Gauls.)

Lux deinde noctem inquietam insecuta est, nec ullum erat tempus quod a novae semper cladis alicujus spectaculo cessaret. Nihil tamen tot onerati atque obruti malis flexerunt animos, quin etsi omnia flammis ac ruinis aequata vidissent, quamvis inopem parvumque quem tenebant collem, libertati relictum, virtute defenderent.

* * * * * * * *

Prima luce signo dato multitudo omnis in foro instruitur; inde clamore sublato ac testudine facta subeunt. Adversus quos Romani nihil temere nec

trepide, ad omnes aditus stationibus firmatis, qua signa ferri videbant, ea robore virorum opposito scandere hostem sinunt, quo successerit magis in arduum, eo pelli posse per proclive facilius rati. Medio fere clivo restitere; atque inde ex loco superiore, qui prope sua sponte in hostem inferebat, impetu facto strage ac ruina fudere Gallos, ut numquam postea nec pars nec universi tentaverint tale pugnae genus. Omissa itaque spe per vim atque arma subeundi obsidionem parant.

II. For Latin Prose.

The wise king had more mind to expose than punish him. So he sent for the man and talked friendly with him, seeming not to know anything of his insolent prophecy. The king gravely asked him whether any future events could be foretold by the stars. Yes, Sir, says the man, without all doubt. Well, have you any skill in the art of foretelling? The man affirmed that he had very good skill. Come then, says the king, tell me where you are to be in the Christmas holidays that are now coming? The man faltered at first, and then plainly confessed he could not tell where. Oh, says the king, I am a better astrologer than you. I can tell you where you will be—in the Tower of London; and accordingly commanded him to be committed a prisoner thither; and when he had lain there till his spirit of divination was a little cooled, the king ordered him to be dismissed for a silly fellow.

III. Answer not more than two of the following questions:—

1. State the principal sources of Roman revenue in the order of their importance, and give an account of the Publicani and their mode of conducting business.

2. Describe the organisation of the Roman legion (1) in the early republic, (2) at the time of Julius Cæsar. Explain the usual mode of constructing the fortifications round a camp.

3. Mention, with dates, the principal events in the wars between Rome and Carthage.

4. What laws protected the life and person of a Roman citizen? What was there exceptional in the execution of the Catilinarian conspirators?

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893

GREEK.

Examiner: G. S. SALE.

I. Translate, adding short grammatical notes where necessary :—

1. Καίτοι σκέψασθε ὡς ἐκόλαζον οἱ πρόγονοι τοὺς ἀδικοῦντας ἑαυτούς, εἰ παραπλησίως ὑμῖν. ἐκεῖνοι Θεμιστοκλέα λαβόντες μεῖζον αὑτῶν ἀξιοῦντα φρονεῖν ἐξήλασαν ἐκ τῆς πόλεως καὶ μηδισμὸν κατέγνωσαν· καὶ Κίμωνα, ὅτι τὴν Παρίων μετεκίνησε πολιτείαν ἐφ᾽ ἑαυτοῦ, παρὰ τρεῖς μὲν ἀφεῖσαν ψήφους, τὸ μὴ θανάτῳ ζημιῶσαι, πεντήκοντα δὲ τάλαντα ἐξέπραξαν. καὶ τοῦτον τὸν τρόπυν προσεφέροντο τηλικαῦτ᾽ αὑτοὺς ἀγαθὰ εἰργασμένοις ἀνθρώποις. δικαίως· οὐ γὰρ αὑτοῖς ἀπεδίδοντο τὴν αὑτῶν ἐλευθερίαν καὶ μεγαλοψυχίαν τῶν ἔργων, ἀλλὰ χρηστοὺς μὲν ὄντας ἐτίμων, ἀδικεῖν δ᾽ ἐπιχειροῦσιν οὐκ ἐπέτρεπον. ὑμεῖς δ᾽ ὦ ἄνδρες Ἀθηναῖοι, τοὺς τὰ μέγιστ᾽ ἀδικοῦντας καὶ φανερῶς ἐξελεγχομένους, ἂν ἓν ἢ δύο ἀστεῖα εἴπωσι καὶ παρὰ τῶν φυλετῶν τινες ᾑρημένοι σύνδικοι δεηθῶσιν, ἀφίετε· ἐὰν δὲ καὶ καταψηφίσησθέ του, πέντε καὶ εἴκοσι δραχμῶν ἐτιμήσατε.

2. Ὁ δ᾽ ὡς ἐπῄσθετ᾽ ἐκ θεοῦ καλούμενος,
αὐδᾷ μολεῖν οἱ γῆς ἄνακτα Θησέα.
κἀπεὶ προσῆλθεν, εἶπεν, ὦ φίλον κάρα
δός μοι χερὸς σῆς πίστιν ἀρχαίαν τέκνοις,
ὑμεῖς τε παῖδες τῷδε· καὶ καταίνεσον
μήποτε προδώσειν τάσδ᾽ ἑκὼν, τελεῖν δ᾽ ὅσ᾽ ἂν
μέλλῃς φρονῶν εὖ ξυμφέροντ᾽ αὐταῖς ἀεί.
ὁ δ᾽, ὡς ἀνὴρ γενναῖος, οὐκ οἴκτου μέτα
κατῄνεσεν τάδ᾽ ὅρκιος δράσειν ξένῳ.
ὅπως δὲ ταῦτ᾽ ἔδρασεν, εὐθὺς Οἰδίπους
ψαύσας ἀμαυραῖς χερσὶν ὧν παίδων λέγει,
ὦ παῖδε. τλάσας χρὴ τὸ γενναῖον φρενὶ
χωρεῖν τόπων ἐκ τῶνδε, μηδ᾽ ἃ μὴ θέμις
λεύσσειν δικαιοῦν, μηδὲ φωνούντων κλύειν.
ἀλλ᾽ ἕρπεθ᾽ ὡς τάχιστα· πλὴν ὁ κύριος
Θησεὺς παρέστω μανθάνων τὰ δρώμενα.
τοσαῦτα φωνήσαντος εἰσηκούσαμεν
ξύμπαντες· ἀστακτὶ δὲ σὺν ταῖς παρθένοις
στένοντες ὡμαρτοῦμεν . . . . .
μόρῳ δ᾽ ὁποίῳ κεῖνος ὤλετ᾽ οὐδ᾽ ἂν εἷς
θνητῶν φράσειε πλὴν τὸ Θησέως κάρα.

[OVER.

II. For Greek Prose.

The Lacedæmonians told the envoys that they were ready to make peace on the following conditions:—That the Athenians should demolish their long walls and the Piraeus, that they should give up all their ships except ten, that they should receive back the exiles, and that they should enter into an offensive and denfensive alliance with the Lacedæmonians. When the envoys returned to Athens, an anxious multitude crowded round them as they entered the city, in terror lest their mission should have been in vain. For matters had now become desperate and numbers were daily perishing from famine. The next day the envoys explained publicly the conditions on which the Lacedæmonians were willing to grant peace; and urged the citizens to accept the terms offered.

III. Answer shortly not more than *two* of the following questions:—

1. Give a short account of the expedition of Xerxes against Greece. What previous expeditions had been sent from Persia, and with what results?

2. Write a short life of Epaminondas.

3. What form of constitution was established at Athens (1) by Solon, (2) by Kleisthenes?

4. Sketch the rise and development of dramatic representations in Greece.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

ENGLISH.

Examiner—PROFESSOR THOMAS GILRAY, M.A.

(All the Questions are to be attempted.)

1. What is meant by a perfect Alphabet? Mention and illustrate the imperfections of the English Alphabet.

2. Trace, with examples, the history of the English Participles and Infinitive Mood.

3. Define and illustrate the following terms:—Doublet, Hybrid, Metonymy, Alexandrine, Apocope, Homonym, Euphemism, Alliteration, Ablaut, Umlaut.

4. Why is *rime* a better spelling than *rhyme?* About what time did the form *rhyme* appear; and what reason is given for its adoption? Give instances of other English words in which faulty spellings have crept in by false analogy.

5. Trace the derivation of the following words:—fairy, anguish, sheriff, spite, blame, month, scarce, stirrup, elbow, husband.

6. Mention the chief requisites in the structure of the Paragraph; and, in this connexion, remark on the functions of some of the leading Conjunctions. Name any English authors remarkable for their excellence in paragraph method.

7. Give a few examples of each of the following changes in the use and meaning of words:—(1) Specialisation; (2) Generalisation; (3) Degradation; (4) Elevation.

8. Re-write the following passages in modern English prose; remark on any peculiar idioms; and write philological notes on the words in italics:—

(1) "With him ther was his sone, a yong *Squyer*,
A lovyere, and a lusty bacheler,
With lokkes crulle as they were leyd in presse.
Of twenty yeer of age he was I gesse.

[OVER.

Of his stature he was of evene lengthe,
And wonderly *delyvere*, and gret of strengthe.
And he hadde ben somtyme in chivachie,
In Flaundres, in Artoys, and Picardie,
And born him wel, as of so litel space,
In hope to stonden in his lady grace."

(2) "The noble hart, that harbours vertuous thought,
And is with child of glorious great intent,
Can never rest, uutill it forth have brought
Th' eternall brood of glorie excellent.
Such restlesse passion did all night torment
The flaming corage of that Faery knight,
Devizing, how that doughtie *turnament*
With greatest honour he atchieven might:
Still did he wake, and still did watch for dawning light."

(3) "This guest of summer,
The temple-haunting martlet, does *approve*
By his loved mansionry that the heaven's breath
Smells wooingly here: no *jutty*, frieze,
Buttress, nor coign of vantage, but this bird
Hath made his pendent bed and procreant cradle:
Where they most breed and haunt, I have observed
The air is delicate."

(4) "Thus with the year
Seasons return; but not to me returns
Day, or the sweet approach of ev'n or morn,
Or sight of vernal bloom, or summer's rose,
Or flocks, or herds, or human face divine;
But cloud instead, and ever-during dark
Surrounds me, from the cheerful ways of men
Cut off, and for the book of knowledge fair
Presented with a universal blank
Of Nature's works to me *expung'd* and *ras'd*,
And wisdom at one entrance quite shut out."

9. Write an Essay on *one* of the following subjects (Attend carefully to expression, pointing, and neatness of form.):—

(1) Facts and Fancies.

(2) Benefits to be derived from a Literary Education.

(3) Dickens and Thackeray: a Criticism and a Contrast.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

FRENCH.

Examiner—W. Michell Clarke, M.A.

(You are requested to send up each section separately.)

Translate:—

A.

Balzac considère la société comme un conflit d'égoïsmes, où la force triomphe guidée par la ruse, où la passion perce sourdement et violemment les digues qu'on lui oppose, où la morale acceptée consiste dans le respect apparent des convenances et de la loi. Cette vue triste et dangereuse l'est d'autant plus, qu'il fait des scélérats hommes de génie, qu'en donnant la théorie du vice il le rend involontairement intéressant et excusable, qu'il peint médiocrement les sentiments élevés et fins, qu'il peint admirablement les sentiments grossiers et bas, et que de temps en temps, emporté par son sujet, il jette des maximes contraires à la paix publique et peut-être même alarmantes pour l'honneur. D'ailleurs cette amère philosophie manque chez lui de son contre-poids naturel, l'histoire, qu'il savait mal; il oubliait que si l'homme aujourd'hui offre beaucoup de vices et de misères, l'homme autrefois en offrait bien davantage, que l'expérience agrandie a diminué la folie de l'imagination, l'aveuglement de la superstition, la fougue des passions, la brutalité des mœurs, l'âpreté des souffrances, et que, chaque siècle, on voit s'accroître notre science et notre puissance, notre modération et notre sécurité. Pour philosopher sur l'homme, ce n'est pas assez d'une observation exacte, il faut encore une observation complète; et la peinture du présent n'est point vraie sans le souvenir du passé.

B.

1. The Reformation is an event long past. The volcano has spent its rage. The wide waste produced by its outbreak is forgotten. The landmarks which were swept away have been replaced. The ruined edifices have been repaired. The lava has covered with a rich incrustation the fields it once devastated, and, after having turned a beautiful and fruitful garden into a desert, has again turned the desert into a still more beautiful and fruitful garden. The second great eruption is not yet over. The marks of its ravages are still all around us. The ashes are still hot beneath our feet. In some directions the deluge of fire still continues to spread. Yet experience surely entitles us to believe that this explosion, like that which preceded it, will fertilize the

soil which it has devastated. Already, in those parts which have suffered most severely, rich cultivation and secure dwellings have begun to appear amidst the waste.

2. How often does the tram (le tramway) pass? Every five minutes. I rarely come in this quarter of the town. When it is fine there are often concerts here. You ought to have brought your sister with you. I have proposed it to her several times, but she has not accepted. Sometimes I don't know what to think of her.

C.

Avez-vous quelquefois, calme et silencieux,
Monté sur la montagne, en présence des cieux!
Etait-ce aux bords du Sund? aux côtes de Bretagne?
Aviez-vous l'Océan au pied de la montagne?
Et là, penché sur l'onde et sur l'immensité,
Calme et silencieux, avez-vous écouté?
Voici ce qu'on entend, du moins un jour qu'en rêve
Ma pensée abattit son vol sur une grève,
Et, du sommet d'un mont plongeant au gouffre amer,
Vit d'un côté la terre et de l'autre la mer,
J'écoutai, j'entendis, et jamais voix pareille
Ne sortit d'une bouche et n'émut une oreille.

Ce fut d'abord un bruit large, immense, confus,
Plus vague que le vent dans les arbres touffus,
Plein d'accords éclatants, de suaves murmures,
Doux comme un chant du soir, fort comme un choc d'armures
Quand la sourde mêlée étreint les escadrons,
Et souffle, furieuse, aux bouches des clairons.
C'était une musique ineffable et profonde,
Qui, fluide, oscillait sans cesse autour du monde,
Et dans les vastes cieux, par ses flots rajeunis,
Roulait élargissant ses orbes infinis
Jusqu'au fond où son flux s'allait perdre dans l'ombre
Avec le temps, l'espace et la forme et le nombre!
Comme une autre atmosphère épars et débordé,
L'hymne éternel couvrait tout le globe inondé.
Le monde, enveloppé dans cette symphonie,
Comme il vogue dans l'air, voguait dans l'harmonie.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

GERMAN.

Examiner—W. Michell Clarke, M.A.

(You are requested to send in each section separately.)

A.

Translate :—

Ossian.

Ossian hat in meinem Herzen den Homer verdrängt. Welch eine Welt, in die der Herrliche mich führt! Zu wandern über die Heide, umsaust vom Sturmwinde, der in dampfenden Nebeln die Geister der Väter im dämmernden Lichte des Mondes hinführt. Zu hören vom Gebirge her im Gebrülle des Waldstroms halbverwehtes Aechzen der Geister aus ihren Höhlen und die Wehklagen des zu Tode sich jammernden Mädchens um die vier moosbedeckten, grasbewachsenen Steine des Edelgefallenen, ihres Geliebten! Wenn ich ihn dann finde, den wandelnden, grauen Barden, der auf der weiten Heide die Fuszstapfen seiner Väter sucht und ach! ihre Grabsteine findet und dann jammernd nach dem lieben Sterne des Abends hinblickt, der sich ins rollende Meer verbirgt, und die Zeiten der Vergangenheit in des Helden Seele lebendig werden, da noch der freundliche Strahl den Gefahren der Tapferen leuchtete und der Mond ihr bekränztes, siegrückkehrendes Schiff beschien! Wenn ich den tiefen Kummer auf seiner Stirne lese, den letzten, verlassenen Herrlichen in aller Ermattung dem Grabe zuwanken sehe, wie er immer neue, schmerzlich glühende Freuden in der kraftlosen Gegenwart der Schatten seiner Abgeschiedenen einsaugt und nach der kalten Erde, dem hohen, wehenden, Grase neidersieht und ausruft: Der Wanderer wird kommen, kommen, der mich kannte in meiner Schönheit, und fragen: wo ist der Sänger, Fingals trefflicher Sohn?

B.

1. About thirty years before this time, a Mahommedan soldier had began to distinguish himself in the wars of Southern India. His education had been neglected; his extraction was humble. His father had been a petty officer of revenue; his grandfather a wandering dervise. But though thus meanly descended, though ignorant even of the alphabet, the adventurer had no sooner been placed at the head of a body of troops than he approved himself a man born for conquest and command. Among the crowd of chiefs who were struggling for a share of India, none could compare with him in the qualities of the captain

and the statesman. He became a general ; he became a sovereign. Out of the fragments of old principalities, which had gone to pieces in the general wreck, he formed for himself a great, compact, and vigorous empire. That empire he ruled with the ability, severity, and vigilance of Louis the Eleventh.

2. Do you speak German ? A little. I know just enough to make myself understood. He speaks it fluently. I understand better than I speak. He has very little accent. You have a very correct pronunciation. You read prose very well, but you do not yet know how to read verse. It is want of practice.

C.

MEPHISTOPHELES.

Der Sturm ist weniger bedenklich mir.
Wenn's heult und brüllt, wenn Alles wankt und kracht,
Ein kriegrisch Wesen bald in dir erwacht,
Das dem Tumult und allen Todesschlägen
Mannstrotzig und frohlockend zieht entgegen.
Bedenklich aber ist das stille Meer,
Dagegen hält dein Trotz und Stolz sich schwer.
Wenn Welle ruht und jedes Lustgeflüster,
Wenn Meer und Himmel schweigend sich umschlingen
Und fromm, fast wie zwei betende Geschwister,
Das könnte, sorg' ich, meinen Faust bezwingen,
Da fürcht' ich Schwärmerei an meinem Faust,
Hat auch der Sturm vergebens ihn gezaust. . . . .

Indessen ist die Nacht hereingebrochen,
Die Wogen brausend an die Klippen pochen,
Von Winden wird die Felsenbucht durchpfiffen,
Die Wetterwolken laut und lauter kommen,
Das Zauberboot ist an den Strand geschwommen,
Es schaukelt sich und tändelt mit den Riffen,
Und drinnen süsse Stimmen musiciren,
Die, kaum gehört, im Sturme sich verlieren.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

ARITHMETIC AND ALGEBRA.

Examiner—PROFESSOR SHAND.

1. Having given that 1 metre = 39·37 inches, express $\cdot 1\dot{0}\dot{9}$ of 11 square metres as the decimal of $\cdot 0\dot{8}1\dot{4}$ of a square yard.

2. A rectangular piece of land is 360 yards long and 121 yards broad. It is divided into three paddocks by lines drawn from a point in one of its longer sides, 100 yards from one end, to the opposite corners. Find the acreage of each paddock, and the expense of fencing the whole at £1 13s. per chain.

3. One portion of lead ore yielded 12 cwt. of lead and 16 oz. of silver per ton of ore, and another portion yielded 10 cwt. of lead and 12 oz. of silver per ton. If the quantity of silver obtained from the 20 tons of ore smelted was 260 oz., what was the average percentage yield of lead?

4. The true present worth of £1757 12s., calculated at 8 per cent. compound interest, payable half-yearly, is £1562 10s.; how long hence is the sum due?

5. If $s = \frac{1}{2}(a + b + c)$, show that

$$(s - b)^3 + (s - c)^3 = a^3 - 3a(s - b)(s - c).$$

6. Simplify the expressions:—

(a) $$\frac{x^4 - 9x^2 + 12x - 4}{x^3 - x^2 - 4x + 4};$$

(b) $$\left\{\frac{1}{1+\sqrt{x}}+\frac{\sqrt{x}}{1-\sqrt{x}}\right\}\cdot\left\{1+\frac{1-\sqrt{x}}{1+\sqrt{x}}\right\}\div\left\{\frac{1}{1-\sqrt{x}}-\frac{\sqrt{x}}{1+\sqrt{x}}\right\};$$

(c) $$\frac{(x^2 - y^2)^3 + (y^2 - z^2)^3 + (z^2 - x^2)^3}{(x - y)^3 + (y - z)^3 + (z - x)^3}.$$

[OVER.

7. Explain what the symbols $a^{\frac{3}{2}}$, $a^{-\frac{2}{3}}$, a° respectively denote, and show how the notation employed is derived from the fundamental definitions.

Square $a^{\frac{1}{2}} + \frac{1}{3}a^{\frac{1}{3}} - \frac{1}{2}a^{-\frac{1}{2}}$, and find the square root of $(4x + z)^2 - 8\sqrt{xz}\,(4x - z)$.

8. Solve the equations:—

(*a*) $x^3 - a^3 = (x - b)^3$;

(*b*) $ax + 2\sqrt{n^2x + nax^2} = n(3x - 1)$;

(*c*) $x^{\frac{1}{2}} - y^{\frac{1}{2}} = 2,\ x^{\frac{3}{2}}\,y^{\frac{1}{2}} + x^{\frac{1}{2}}\,y^{\frac{3}{2}} = 510$.

9. Form the equation whose roots are the sum and product of the reciprocals of the roots of $ax^2 - bx + c = 0$.

10. A performs the m^{th} part of a piece of work in a days. He then with the aid of another person finishes it in b days. In what time could each do it separately?

11. Insert two harmonical means between a and b. Show that the sum to 12 terms of the series

$$2 + \sqrt[4]{8} + \sqrt{2} + \&c.$$

is seven-eighths of the sum to infinity.

12. Prove that the number of combinations of n things taken r together is the same as the number taken $(n - r)$ together; and also that the number of combinations of $(n + 1)$ things taken r together is equal to the sum of the combinations of n things taken r together and $(r - 1)$ together.

At a city election there are 7 candidates, and an elector may vote for any number not exceeding three. In how many ways is it possible to vote?

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

EUCLID AND TRIGONOMETRY.

Examiner—PROFESSOR SHAND.

1. At a given point in a given straight line to make an angle equal to a given angle.

Having given the sum of the side and diagonal of a square, to construct the square.

2. In obtuse-angled triangles, if a perpendicular be drawn from either of the acute angles to the opposite side produced, the square of the side subtending the obtuse angle is greater than the squares of the sides containing the obtuse angle, by twice the rectangle contained by the side upon which, when produced, the perpendicular falls, and the straight line intercepted without the triangle between the perpendicular and the obtuse angle.

If the sides of the triangle are 2, 4, and 5, find its area.

3. LM is a chord of a circle drawn parallel to the diameter AB, and a perpendicular to the chord from the centre meets the circumference in R. If any point P be taken in the diameter, show that the squares of PL and PM are together double of the square of PR.

4. Two lines intersect one another, and the rectangle contained by the segments of one of them is equal to the rectangle contained by the segments of the other. Show that a circle may be described passing through their extremities.

5. If the exterior vertical angle of a triangle be bisected by a straight line which cuts the base produced, the segments between the dividing line and the extremities of the base have the same ratio which the other sides of the triangle have to one another.

If another line be drawn bisecting the vertical angle of the triangle and meeting the base, show that the base will be divided harmonically.

[OVER.

6. If the exterior vertical angle of a triangle be bisected by a straight line which cuts the base produced, the rectangle contained by the sides of the triangle, together with the square of the bisecting line, is equal to the rectangle contained by the segments of the base intercepted between its extremities and the bisecting line.

7. Define the units employed in measuring angles, and find their relation to one another.

> Divide a right angle into two parts such that the number of degrees in the one part is to the number of radians in the other part as $120 : \pi$

8. Express tan A in terms of tan ½ A. Apply this expression to find the value of tan 22½°. What is the angle whose tangent is given by the other root of the equation?

9. Verify the formulæ—

(*a*) $\cos 3\,A = 4 \cos^3 A - 3 \cos A$;

(*b*) $\dfrac{\sin^2 2\,A - 2}{4 \sin^2 A - 2} = \dfrac{1 + \tan^4 A}{1 - \tan^4 A}$;

(*c*) $\cos^3 A \sin 3\,A + \sin^3 A \cos 3\,A = \frac{3}{4} \sin 4\,A.$

10. Eliminate B from the equations—

$$(a + b) \,.\, \tan \tfrac{1}{2} (A - B) = (a - b) \,.\, \tan \tfrac{1}{2} (A + B),$$
$$b \cos A + a \cos B = c\,;$$

and find the values of θ which satisfy the equation $\operatorname{cosec} 3\alpha - \operatorname{cosec} 3\theta = \cot 3\alpha - \cot 3\theta$.

11. In a triangle, prove that $\cos \frac{1}{2} A = \sqrt{\dfrac{s(s-a)}{bc}}$, and that the bisector of the angle $A = \dfrac{2\,bc}{b+c} \,.\, \cos \frac{1}{2} A$.

12. Wishing to determine the height of a mountain, I chose two stations in the same vertical plane with the highest point of the mountain, at which the angles subtended by its elevation were 30° and 60° respectively. The distance between the two stations was found to be 4000 feet, and the elevation of the one station as observed from the other was 13° 25′. Find the height of the mountain.

[log 2 = ·301030, log 5·811 = ·764251, L sin 46° 35′ = 9·861161.]

UNIVERSITY OF NEW ZEALAND.

ENTRANCE EXAMINATION, 1893.

JUNIOR SCHOLARSHIP PAPER.

HISTORY AND GEOGRAPHY.

Examiner—T. R. FLEMING, M.A., LL.B.

(Candidates are advised to attempt all the Questions).

1. When were Spain, Holland, and France respectively rivals of England for the supremacy of the sea? What wars and treaties gave England the supremacy over each? Give the chief provisions of the English Act that struck a blow at the shipping of the Dutch. When was it repealed?

2. Write brief notes on each of the following:—Divine Right, Dispensing Power, Cabal, Levellers, Habeas Corpus, Tory, Whig, Thorough, Cabinet, Excise.

3. Sketch the life of James Cook, and show the importance of his discoveries. Name the Englishmen who sailed round the world before Cook, and mention the discoveries of any *one* of them.

4. Sketch briefly the progress of opinion on the necessity for parliamentary reform from the time of Chatham, giving an account of the Reform Bills passed by the British Parliament. What reforms have been made in New Zealand?

5. Describe the different kinds of government of the British Colonies. Name and locate the chief "Crown Colonies."

6. With what movements (political or social) are the names of the following connected?—Thomas Clarkson, Henry Grattan, Robert Owen, Richard Cobden, Daniel O'Connell, John Stuart Mill, Rowland Hill, Charles Kingsley, Lord Shaftesbury, Thomas Carlyle. Give a very brief sketch (with dates) of any two of these movements.

7. Compare the Atlantic and Pacific Oceans with respect to shape, area, colour, saltness, depth, and character of islands.

8. Write notes on India under the following heads:—(1) Chief natural features, illustrating their political importance; (2) Climate; (3) Productions; (4) Government.

9. Draw a map of the world on Mercator's projection. Mark those parts of the chief continents occupied by the Aryan, Mongol, and Negro races respectively, and mark the chief routes between New Zealand and Great Britain.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

CHEMISTRY.

Examiner: PROFESSOR F. D. BROWN.

---

1. Make a careful statement of Gay Lussac's law of gaseous volumes, and of Avogadro's law. How are these two laws related to each other?

2. Compare the properties of hydrogen chloride, bromide, and iodide, laying special stress on the relative stability of these substances.

3. How would you prepare a quantity of pure nitric peroxide? Give an account of the change which this substance undergoes when it is heated.

4. How would you demonstrate the composition of ammonia gas?

5. Describe the method of determining vapour densities devised by Victor Meyer, and point out the advantages which it possesses over other methods.

6. A solution of ferric chloride contains 5·6 grams per litre. What volume of sulphuretted hydrogen, measured at normal temperature and pressure, would be required to completely reduce 50cc of the solution?

7. Give the formulæ of the chromates of potassium. How are these substances obtained from chrome iron ore?

8. What do you understand by the term "basic salt"? Give several instances of the formation of these compounds.

9. Give an account of the compounds of tin with sulphur and with oxygen. What other element most resembles tin in its chemical behaviour? How would you ascertain the presence of tin in an ordinary bronze coin?

NEW ZEALAND UNIVERSITY.

JUNIOR SCHOLARSHIP EXAMINATION.

MECHANICS.

PROFESSOR GIBBONS.

1. State and prove the proposition called the triangle of forces.

A uniform rod of weight W, which can turn freely about a joint at one end, is supported in a horizontal position by a string attached to the other end, and making an angle of 30° with the rod: find the tension of the string, and the stress at the joint.

2. Find the centre of gravity of a triangular lamina.

A square sheet of cardboard has one corner, forming an isosceles triangle, whose vertex is at the centre of the square, turned down: find the point about which the cardboard will balance.

3. What is the moment of a force about a point?

Prove that the algebraic sum of the moments of any two forces meeting at a point, about any point, is equal to the moment of the resultant.

4. Find the relation between the power and the weight in that system of pulleys in which each of the strings, all supposed to be parallel, is attached to the weight, the weights of the pulleys all being equal.

If the power is equal to the weight of one of the pulleys, and the number of the pulleys is five, prove that the ratio of the weight to the power is 57 to 1.

5. What is meant by a velocity of 10 units, and by an acceleration of 10 units, when the units of space and time are a yard and a minute respectively?

Explain what is meant by the symbol g, and find its value in terms of the above units.

6. Define *Kinetic Energy, Work, Horsepower.*

Find in foot tons the work done by an engine in increasing the velocity of a train whose total mass is 60 tons on a smooth level—

(1.) From rest to 20 miles an hour.
(2.) From 20 to 40 miles an hour.

7. A railway truck, starting from rest, runs down an incline half a mile long in two minutes: find the acceleration, supposed to be uniform, of its motion, and the velocity with which it reaches the foot of the incline.

Find how far it will run along the level at the foot of the incline, assuming the friction of the rails, etc., to be 14lbs. for every ton in motion.

8. Show that the time of descent from rest down any chord of a vertical circle drawn from the highest point is constant.

Two vertical circles, whose radii are 10 and 6 feet, touch each other at the highest point A; a straight line is drawn from the point of contact to meet the outer circle: find the time of describing from rest at A the portion of the line intercepted between the two circles.

9. How is the specific gravity of a mixture of two known fluids to be calculated?

A body weighing 14lbs. is fastened to a piece of copper weighing 31½lbs. (specific gravity 9), and the two bodies together weigh 17½lbs. in a liquid whose specific gravity is 2⅔: Find the specific gravity of the body.

10. Show that the whole pressure of a liquid on a surface is equal to the weight of a column of liquid, of which the base is equal to the area of the surface, and the height is equal to the depth of its centre of gravity below the surface of the liquid.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

SOUND AND LIGHT.

Examiner—PROFESSOR SHAND.

1. What are nodes and antinodes? Explain how nodes are formed in a vibrating string. Account for the formation of Chladni's figures.

2. Calculate the velocity of sound in iron, taking the value of its coefficient of elasticity as 2·1 billion dynes, and its density as 7·7.

3. What are harmonics? What are the intervals between the first and second harmonics given by a string and by a closed pipe respectively?

A string, 50 centimetres in length, and weighing 4·9 grammes, is stretched by a weight of 62½ kilogrammes. What is the vibration frequency of its fundamental note, and of the first and second harmonics?

4. Describe and explain the use of Rumford's photometer.

In an experiment with this photometer, the shadows cast by a cylindrical rod placed at a distance of 3 inches from the screen, were adjudged to be of equal intensity when the distance of the standard candle from the middle of the screen was 15 inches, and that of a gas flame 51 inches; what was the candle-power of the gas flame?

5. What are conjugate foci? State and prove the relation existing between the distances of any pair of conjugate foci from the surface of a spherical concave mirror.

When an object is placed 12 inches in front of a convex mirror, the length of the image is observed to be two-thirds of that of the object; what is the radius of curvature of the mirror?

[OVER

6. Quote the law of refraction. Describe some apparatus by which the law may be verified. What is the relation between the refractive index of a substance and the velocity of light in the substance.

A double-convex glass lens has a focal length of 5 inches. If the radius of curvature of each of its faces is $6\frac{1}{2}$ inches, what is the refractive index of the glass?

7. Give a description of the human eye regarded as an optical instrument. Explain how the operation of focusing is performed.

8. What are the essential parts of a spectroscope? State the use of each part. Explain the arrangement of the prisms in a direct-vision spectroscope.

9. What are the Fraunhofer lines? Explain how their existence is accounted for. Draw a diagram showing the position of the prominent lines which Fraunhofer distinguished by the names of letters of the alphabet, and specify, as far as you are able, the elements indicated by these lines.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

HEAT.

Examiner—PROFESSOR SHAND.

1. Describe the weight-thermometer, and explain how it is used to determine the coefficient of expansion of a liquid.

> A weight-thermometer contains 41·312 grammes of water at 15° C., but when the temperature has been raised to 80° C., the weight of water which it contains is only 40·25 grammes. Hence find the mean coefficient of expansion of water between these temperatures, the coefficient of cubical expansion of the containing vessel being ·000026.

2. The density of a solid is determined at the temperature t° with reference to water at the same temperature; give the formula which expresses its true density at 0° C.

> A steel foot-rule is correct at 0° C., and a brass foot-rule is correct at 10° C.; at what temperature will they agree in length, the coefficients of linear expansion of steel and brass being ·000012 and ·000019 respectively?

3. What is meant by "absolute temperature"? Give reasons for the assumption of an absolute zero of temperature.

> A vessel contains 10 grammes of air at the temperature of 7° C. and pressure of 780 millimetres of mercury; how much air will it contain at the temperature of 27° C. and the pressure of 750 millimetres, the expansion of the vessel being neglected?

4. Why does a mixture of ice and salt produce a low temperature? Why do pieces of ice which have been pressed together at the temperature of 0° C. unite by freezing? Why does the water freeze in a cryophorus?

5. Quote Dalton's laws respecting the mixture of a gas and vapour. Explain a method of determining the vapour-pressure existing in the air.

[OVER

6. Supposing you were required to determine the specific heat of a liquid by the method of mixture, state what apparatus you would require, and explain in detail the manner in which you would perform the experiment.

7. In an experiment to determine the specific heat of a solid by the method of mixture the following observations were made:—

Weight of water in calorimeter, 150 grammes;
Water-equivalent of calorimeter with thermometer, 10 grammes;
Initial temperature of water, 15·4° C.;
Weight of solid, 100 grammes;
Temperature of solid, 100° C.;
Final temperature of water, corrected, 20·8° C.

Hence determine the specific heat of the solid.

8. How do you account for the hot dry north-west winds which frequently blow over the Canterbury Plains in New Zealand?

9. In what circumstances is heat developed by mechanical action? State the value of Joule's equivalent in English and in C.G.S. units.

A meteorite, having a mass of 1 oz., enters the earth's atmosphere with a relative velocity of 20 miles per second; find the heat generated.

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, 1893.

ELECTRICITY AND MAGNETISM.

Examiner—PROFESSOR SHAND.

1. A large plate is supported over a gold-leaf electroscope, and a glass rod excited by rubbing with silk is brought down near to the plate. Explain the electrical condition of the plate and the electroscope (1) when the plate is of metal and insulated, (2) when it is of metal and uninsulated, (3) when it is of ebonite.

2. Three insulated spheres, the diameters of which are 20, 8, and 4 centimetres, are connected by thin wires, and receive a charge of 880 units of electricity; find their common potential and the electrical density on each sphere.

3. What is a condenser? Obtain the formula for the capacity of a plate condenser.

> A condenser, the armatures of which are metal discs 16 centimetres in diameter, has a capacity of 220. If the thickness of the dielectric is 2 millimetres, what is its specific inductive capacity?

4. Explain the following terms:—Magnetic substance, magnetic field, magnetic moment, magnetic lines of force, magnetic permeability, magnetic retentivity, magnetic saturation, isogonic and isoclinic lines.

5. Find the intensity of the magnetic field at the centre of a coil having 12 turns of wire of a mean radius of 15 centimetres, when a current of ·35 amperes is passing through the coil.

6. Give the laws of electrolysis. What is meant by the electro-chemical equivalent of a substance?

> You are provided with a silvering bath, the resistance of which together with the connecting wires is ·2 ohm, and with 20 bichromate cells, each having an E.M.F. of 1·8 volt and a resistance of ·25 ohm. How would you group the cells so as to obtain the most rapid deposit of silver? And what would be the weight of silver deposited per hour?

[OVER.

7. Explain the principle of Wheatstone's bridge. Draw a diagram showing the arrangements to be made when the resistance of a coil has to be measured by a Slide Bridge, and explain the mode of operating.

8. A small voltaic cell floats in a basin of water, and carries over it an upright coil of wire through which the current from the cell passes. Explain what takes place when the pole of a magnet is presented to the coil.

9. The poles of a cell are connected successively by two wires, the resistances of which are 4 ohms and 9 ohms respectively; what must be the internal resistance of the cell in order that the quantities of heat developed per minute in the two wires may be equal?

UNIVERSITY OF NEW ZEALAND.

JUNIOR SCHOLARSHIP EXAMINATION, DECEMBER, 1893.

BOTANY.

Examiner: PROFESSOR A. P. W. THOMAS.

1. Give an account of the structure, mode of increase, and nutrition of Protococcus. In what respects does it differ from Spirogyra?

2. Give an account of the mode of reproduction of a fern, and compare it with that of a pine.

3. Describe the structure and mode of reproduction of Saprolegnia, and compare it with Mucor.

4. Write an account of the structure and modes of reproduction of Marchantia. In what important respects does it differ from a fern?

5. Describe a fibro-vascular bundle in any dicotyledon, giving the manner of formation of its constituent elements. What do you understand by a closed bundle, and in what plants are such bundles found?

6. The flower has been described as a shoot modified for the purpose of reproduction. On what evidence is this statement based?

7. Certain elements are said to be essential to the growth of plants. What are these elements, and how are they absorbed by the plant? Give the experimental evidence on which the conclusions are based?

8. Give some account of the characters of flowers and fruit in the following orders:—Orchideæ, Ranunculaceæ, Polygoneæ, Rubiaceæ. Give diagrams of the flowers where you can.

UNIVERSITY OF NEW ZEALAND.

7.2. 1/4

EXAMINATION PAPERS,

NOVEMBER, 1893.

B.A. and B.Sc. Pass: Senior and Tinline Scholarships: Honours in Arts and Science: LL.B. Pass: LL.D. Pass: M.B. Pass: B.Mus. Pass: Barristers' and Solicitors' Law: Engineering.

EACH PAPER OCCUPIES THREE HOURS.

LONDON AND NEW ZEALAND.
TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET:
AND LYON AND BLAIR, WELLINGTON, N.Z.
1893.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER a.

I. *Translate*:—

(A.) Cicero: De Senectute, § 11.

Nec vero in armis praestantior quam in toga; qui consul iterum Sp. Carvilio collega quiescente C. Flaminio tribuno plebis, quoad potuit, restitit agrum Picentem et Gallicum viritim contra senatus auctoritatem dividenti; augurque cum esset, dicere ausus est 'optimis auspiciis ea geri, quae pro rei publicae salute gererentur; quae contra rem publicam ferrentur, contra auspicia ferri.'

(B.) Ibid. § 43.

Vixerat M'. Curius cum Decio, qui quinquennio ante eum consulem se pro re publica quarto consulatu devoverat; norat eundem Fabricius, norat Coruncanius; qui cum ex sua vita, tum ex eius, quem dico, Deci, facto iudicabant esse profecto aliquid natura pulchrum atque praeclarum, quod sua sponte peteretur, quodque spreta et contempta voluptate optumus quisque sequeretur.

(C.) Ibid. § 70.

Neque enim histrioni, ut placeat, peragenda fabula est, modo, in quocumque fuerit actu, probetur, neque sapienti usque ad 'Plaudite' veniendum est. Breve enim tempus aetatis satis

longum est ad bene honesteque vivendum; sin processerit longius, non magis dolendum est, quam agricolae dolent praeterita verni temporis suavitate aestatem autumnumque venisse.

II. *Translate and explain*:—

1. (*a*) Delectabatur cereo funali et tibicine, quae sibi nullo exemplo privatus sumpserat.

(*b*) Unus homo nobis cunctando restituit rem:
noenum rumores ponebat ante salutem;
ergo plusque magisque viri nunc gloria claret.

(*c*) Dum sumus inclusi in his compagibus corporis, munere quodam necessitatis et gravi opere perfungimur.

(*d*) Quo quidem me proficiscentem haud sane quid facile retraxerit, nec tamquam Pelian recoxerit.

2. Explain *tempestiva convivia—laudatio—vicit Olumpia—lex Voconia—vadimonia—patribus bonis interdici solet—si nemini emancipata est* (*senectus*)—*sodales—magisteria—cavea—quincunx—ad carceres a calce—occatio.*

3. Give a brief account of the life of Cato, with dates, indicating the events of his life to which allusion is made in the *De Senectute.*

4. State the four main objections to old age which Cato combats, and show how he refutes them.

III. *Translate*:—

(A.) HORACE: Odes, I. 2, 13–20.

Vidimus flavum Tiberim retortis
Litore Etrusco violenter undis
Ire deiectum monumenta regis
Templaque Vestae.

Iliae dum se nimium querenti
Iactat ultorem, vagus et sinistra
Labitur ripa Iove non probante ux-
orius amnis.

(B.) Ibid. I. 28, 7–15.

Occidit et Pelopis genitor, conviva deorum,
Tithonusque remotus in auras

Et Iovis arcanis Minos admissus, habentque
Tartara Panthoiden iterum Orco
Demissum, quamvis clipeo Troiana refixo
Tempora testatus nihil ultra

Nervos atque cutem morti concesserat atrae,
Iudice te non sordidus auctor
Naturae verique.

(C.) Ibid. II. 17, 22–30.

Te Iovis inpio
Tutela Saturno refulgens
Eripuit volucrisque Fati

Tardavit alas, cui populus frequens
Laetum theatris ter crepuit sonum;
Me truncus inlapsus cerebro
Sustulerat, nisi Faunus ictum

Dextra levasset, Mercurialium
Custos virorum.

1. *Translate, with careful explanations*:—

(*a*) Semotique prius tarda necessitas
Leti corripuit gradum.

(*b*) Non ego te, candide Bassareu,
Invitum quatiam, nec variis obsita frondibus
Sub divum rapiam.

(*c*) Iuno et deorum quisquis amicior
Afris inulta cesserat impotens
Tellure. victorum nepotes
Rettulit inferias Iugurthae.

(*d*) Num tu, quae tenuit dives Achaemenes
Aut pinguis Phrygiae Mygdonias opes,
Permutare velis crine Licymniae?

2. Elucidate: *domus Albuneae resonantis — animae magnae prodigum Paullum — interiore nota Falerni — nec regna vini sortiere talis—dulci laborum decipitur sono—aetas illi quos tibi dempserit apponet annos — Catonis nobile letum — timet catenas Parthus et Italum robur.*

3. What indications do the first two books of the *Odes* afford of the feelings with which Horace regarded the establishment of the Empire?

4. Quote allusions made by Horace in these two books of the *Odes* to the circumstances and events of his own life.

IV. *Translation from books not previously prescribed*:—

(A.)

Urbes maritimae non solum multis periculis oppositae sunt, sed etiam caecis. Nam terra continens adventus hostium non modo expectatos, sed etiam repentinos multis indiciis et quasi fragore quodam et sonitu ipso ante denuntiat; neque vero quisquam potest advolare terra, quin eum non modo esse, sed etiam quis et unde sit, scire possimus. Maritimus vero ille et navalis hostis ante adesse potest quam quisquam venturum esse suspicari queat, nec vero, cum venit, prae se fert aut qui sit aut unde veniat aut etiam quid velit, denique ne nota quidem ulla, pacatus an hostis sit, discerni ac indicari potest.

Cicero, *De Republica*, I. §§ 5, 6.

Ovid: Tristia, IV. 6, 9–18.

(B.)

Tempus, ut extensis tumeat, facit, uva racemis,
 Vixque merum capiant grana, quod intus habent,
Tempus et in canas semen producit aristas,
 Et ne sint tristi poma sapore, cavet.
Hoc tenuat dentem terram renovantis aratri,
 Hoc rigidas silices, hoc adamanta terit.
Hoc etiam saevas paulatim mitigat iras,
 Hoc minuit luctus maestaque corda levat.
Cuncta potest igitur tacito pede lapsa vetustas
 Praeterquam curas attenuare meas.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER b.

I. *Translate into Latin Prose:—*

No sooner was the result of the mission communicated than the whole Kingdom was thrown into a ferment. The high-spirited Catalans rose in arms, almost to a man. The royal governor, after a fruitless attempt to escape, was seized and imprisoned in Barcelona. Troops were levied and placed under the command of experienced officers of the highest rank. The heated populace, outstripping the tardy movement of military operations, marched forward to Lerida, in order to get possession of the royal person. The King, who had seasonable notice of this, displayed his wonted presence of mind. He ordered supper to be prepared for him at the usual hour, but on the approach of night, made his escape on horseback with one or two attendants only, on the road to Fraga, a town within the territory of Aragon; while the mob, traversing the streets of Lerida, and finding little resistance at the gate, burst into the palace, and ransacked every corner of it, piercing, in their fury, even the curtains and beds with their swords and lances.—*Prescott.*

[*Turn over.*

II. *Questions on Grammar arising out of the prescribed books* :—

1. Parse fully and give the meaning of *levasso, operto, subacto, demetendis, dimetiendis, barbiton, macerer, amystide, bearis, prensus.*

2. Mention, with illustrations, case-constructions occurring in Horace's Odes I., II., which are not found in the prose of Cicero.

3. Explain the points of syntax which are noteworthy in the following extracts, viz. :—

(*a*) discebant enim fidibus antiqui.

(*b*) volumus sane, tamquam longam viam confeceris, quam nobis quoque ingrediundum sit, istuc, quo pervenisti, videre quale sit.

(*c*) isto bono utare dum adsit, cum absit, ne requiras.

(*d*) audax omnia perpeti gens humana ruit per vetitum nefas.

(*e*) nunc Saliaribus ornare pulvinar deorum tempus erat dapibus, sodales.

(*f*) caret invidenda sobrius aula.

(*g*) nulla certior tamen rapacis Orci fine destinata aula divitem manet erum.

III. *General Questions on Latin Grammar* :—

1. Express in Latin 'thirtieth,' 'three hundredth,' 'three hundred each,' 'nine hundred times,' 'a million.'

2. How are *nedum, at enim, quin, dummodo,* and *ne* (affirmative) used in Latin ?

3. Explain the following grammatical expressions, viz. :— 'sequence of tenses,' 'predicative dative,' 'attraction of the relative,' 'hendiadys,' 'anacoluthon.'

4. Put the following into *oratio obliqua* :—

Scimus Persea regem a populo Romano appellatum ; audimus legatos Romanos venisse ad regem et eos benigne acceptos. Haec omnia pacis equidem signa esse iudico, non belli. Cur quidem nos bellum adversus regnum Macedonum geramus, non video. Opportuni propinquitate ipsa Macedoniae sumus ?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

GREEK LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER a.

I. ***Translate*** :—

(A.) Sophocles: Antigone, 365–375.

Σοφόν τι τὸ μηχανόεν τέχνας ὑπὲρ ἐλπίδ' ἔχων
ποτὲ μὲν κακὸν, ἄλλοτ' ἐπ' ἐσθλὸν ἕρπει,
νόμους παραιρῶν χθονὸς
θεῶν τ' ἔνορκον δίκαν·
ὑψίπολις ἄπολις ὅτῳ τὸ μὴ καλὸν
ξύνεστι τόλμας χάριν.
μήτ' ἐμοὶ παρέστιος
γένοιτο μήτ' ἴσον φρονῶν ὃς τάδ' ἔρδει.

(B.) Ibid.: 631–638.

KP. *τάχ' εἰσόμεσθα μάντεων ὑπέρτερον.*
ὦ παῖ, τελείαν ψῆφον ἆρα μὴ κλύων
τῆς μελλονύμφου πατρὶ λυσσαίνων πάρει;
ἢ σοὶ μὲν ἡμεῖς πανταχῇ δρῶντες φίλοι;
AI. *πάτερ, σός εἰμι· καὶ σύ μοι γνώμας ἔχων*
χρηστὰς ἀπορθοῖς, αἷς ἔγωγ' ἐφέψομαι.
ἐμοὶ γὰρ οὐδεὶς ἀξιώσεται γάμος
μείζων φέρεσθαι σου καλῶς ἡγουμένου.

(C.) Ibid.: 1053–1060.

ΚΡ. οὐ βούλομαι τὸν μάντιν ἀντειπεῖν κακῶς.
ΤΕ. καὶ μὴν λέγεις, ψευδῆ με θεσπίζειν λέγων.
ΚΡ. τὸ μαντικὸν γὰρ πᾶν φιλάργυρον γένος.
ΤΕ. τὸ δ' ἐκ τυράννων αἰσχροκερδίαν φιλεῖ.
ΚΡ. ἆρ' οἶσθα ταγοὺς ὄντας ἃν λέγῃς λέγων;
ΤΕ. οἶδ' · ἐξ ἐμοῦ γὰρ τήνδ' ἔχεις σώσας πόλιν.
ΚΡ. σοφὸς σὺ μάντις, ἀλλὰ τἀδικεῖν φιλῶν.
ΤΕ. ὄρσεις με τἀκίνητα διὰ φρενῶν φράσαι.

1. Translate, and carefully explain:—

(*a*) οὐδὲν γὰρ οὔτ' ἀλγεινὸν οὔτ' ἄτης ἄτερ
οὔτ' αἰσχρὸν οὔτ' ἄτιμον ἐσθ' ὁποῖον οὐ
τῶν σῶν τε κἀμῶν οὐκ ὄπωπ' ἐγὼ κακῶν.

(*b*) κοὐδεὶς ἐναργής, ἀλλ' ἔφευγε πᾶς τὸ μή.

(*c*) οὐδ' ὄρνις εὐσήμος ἀπορροιβδεῖ βοάς,
ἀνδροφθόρου βεβρῶτες αἵματος λίπος.

2. Explain θυστάδες λιταί—ἀκτέριστον παστάδα—σκαιότητ' ὀφλισκάνειν—ἀνδρῶν ἀλφηστᾶν—ἀνέμοεν φρόνημα—μετοικίας τῆς ἄνω.

3. What is meant by the "irony" of Sophocles? Illustrate it from this play.

4. Show the artistic merits of the portraiture of Antigone in the play, from the Greek point of view. What dramatic purpose is served by the φύλαξ in the play?

II. *Translate*:—

(A.) Demosthenes: Philippic I. § 47.

Νῦν δ' εἰς τοῦθ' ἥκει τὰ πράγματ' αἰσχύνης, ὥστε τῶν στρατηγῶν ἕκαστος δὶς καὶ τρὶς κρίνεται παρ' ὑμῖν περὶ θανάτου, πρὸς δὲ τοὺς ἐχθροὺς οὐδεὶς οὐδ' ἅπαξ αὐτῶν ἀγωνίσασθαι περὶ θανάτου τολμᾷ, ἀλλὰ τὸν τῶν ἀνδραποδιστῶν καὶ λωποδυτῶν θάνατον μᾶλλον αἱροῦνται τοῦ προσήκοντος· κακούργου μὲν γὰρ ἐστι κριθέντ' ἀποθανεῖν, στρατηγοῦ δὲ μαχόμενον τοῖς πολεμίοις.

(B.) DEMOSTHENES: Philippic II. §§ 14, 15.

Οὐκοῦν φασὶ μὲν μέλλειν πρὸς Θηβαίους αὐτὸν ὑπόπτως ἔχειν, καὶ λογοποιοῦσιν περιιόντες τινὲς ὡς Ἐλάτειαν τειχιεῖ· ὁ δὲ ταῦτα μὲν μέλλει καὶ μελλήσει γ', ὡς ἐγὼ κρίνω, τοῖς Μεσσηνίοις δὲ καὶ τοῖς Ἀργείοις ἐπὶ τοὺς Λακεδαιμονίους συλλαμβάνειν οὐ μέλλει, ἀλλὰ καὶ ξένους εἰσπέμπει καὶ χρήματ' ἀποστέλλει καὶ δύναμιν μεγάλην ἔχων αὐτός ἐστι προσδόκιμος.

(C.) DEMOSTHENES: Philippic III. §§ 67–8.

Μωρία καὶ κακία ταῦτ' ἐλπίσαι, καὶ κακῶς βουλευομένους καὶ μηδὲν ὧν προσήκει ποιεῖν ἐθέλοντας, ἀλλὰ τῶν ὑπὲρ τῶν ἐχθρῶν λεγόντων ἀκροωμένους, τηλικαύτην ἡγεῖσθαι πόλιν οἰκεῖν τὸ μέγεθος, ὥστε μηδ' ἂν ὁτιοῦν ᾖ δεινὸν πείσεσθαι. καὶ μὴν ἐκεῖνό γ' αἰσχρὸν ὕστερόν ποτ' εἰπεῖν "τίς γὰρ ἂν ᾠήθη ταῦτα γενέσθαι; νὴ τὸν Δί', ἔδει γὰρ τὸ καὶ τὸ ποιῆσαι, καὶ τὸ μὴ ποιῆσαι."

1. Translate, with careful explanations of difficulties and allusions:—

(*a*) *καὶ γὰρ ἐκείνων ὁ πληγεὶς ἀεὶ τῆς πληγῆς ἔχεται, κἂν ἑτέρωσε πατάξῃς, ἐκεῖσέ εἰσιν αἱ χεῖρες· προβάλλεσθαι δ' ἢ βλέπειν ἐναντίον οὔτ' οἶδεν οὔτ' ἐθέλει.*

(*b*) *σιωπῶ θέρος καὶ χειμῶνα, ὡς οὐδὲν διαφέρει, οὐδ' ἐστὶν ἐξαίρετος ὥρα τις, ἣν διαλείπει.*

(*c*) *ἀναμνῆσαι βούλομαι τίς ὁ Φωκέας πείσας καὶ Πύλας ποιήσας προέσθαι.*

2. Explain briefly *ἡ ἱερὰ τριήρης—ἀποτυμπανίσαι—ἀντίδοσις—σύνταξις—ἡ πυλαία—εἰσφέρειν—χειροτονεῖν—ἡ προμαντεία τοῦ θεοῦ—περιστοιχίζεσθαι.*

3. Give a short account, with dates, of the progress of Philip, down to the time of the latest of these speeches.

III. *Translation from books not previously prescribed*:—

(A.) Demosthenes: Conon, § 3.

’Εξήλθομεν, ἔτος τουτὶ τρίτον, εἰς Πάνακτον φρουρᾶς ἡμῖν προγραφείσης. ἐσκήνωσαν οὖν οἱ υἱεῖς οἱ Κόνωνος τουτουὶ ἐγγὺς ἡμῶν, ὡς οὐκ ἂν ἐβουλόμην· ἡ γὰρ ἐξ ἀρχῆς ἔχθρα καὶ τὰ προσκρούσματ’ ἐκεῖθεν ἡμῖν συνέβη, ἐξ ὧν δ’, ἀκούσεσθε. ἔπινον ἑκάστοτε οὗτοι τὴν ἡμέραν, ἐπειδὴ τάχιστα ἀριστήσαιεν, ὅλην, καὶ τοῦθ’, ἕως περ ἦμεν ἐπὶ τῇ φρουρᾷ, διετέλουν ποιοῦντες. ἡμεῖς δ’ ὥσπερ ἐνθάδ’ εἰώθαμεν, οὕτω διήγομεν καὶ ἔξω. ἣν οὖν δειπνοποιεῖσθαι τοῖς ἄλλοις ὥραν συμβαίνοι, ταύτην ἂν ἤδη ἐπαρῴνουν οὗτοι.

(B.) Euripides: Orestes, 459–469.

ΟΡ. *ἀπωλόμην, Μενέλαε· Τυνδάρεως ὅδε*
στείχει πρὸς ἡμᾶς, οὗ μάλιστ’ αἰδώς μ’ ἔχει
εἰς ὄμματ’ ἐλθεῖν τοῖσιν ἐξειργασμένοις.
καὶ γάρ μ’ ἔθρεψε μικρὸν ὄντα, πολλὰ δὲ
φιλήματ’ ἐξέπλησε, τὸν ’Αγαμέμνονος
παῖδ’ ἀγκάλαισι περιφέρων, Λήδα θ’ ἅμα,
τιμῶντέ μ’ οὐδὲν ἧσσον ἢ Διοσκόρω.
οἷς, ὦ τάλαινα καρδία ψυχή τ’ ἐμή,
ἀπέδωκ’ ἀμοιβὰς οὐ καλάς. τίνα σκότον
λάβω προσώπῳ; ποῖον ἐπίπροσθεν νέφος
θῶμαι, γέροντος ὀμμάτων φεύγων κόρας;

UNIVERSITY OF NEW ZEALAND

B.A. & B.Sc. PASS EXAMINATION, 1893.

GREEK LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER b.

I. *Translate into Greek Prose*:—

The fight began; the Lacedaemonians were driven to their camp by the light Achaian troops; the heavy armed were marching to the support of their brethren, now broken in the pursuit, and perhaps engaged in plunder. But when they reached a torrent-bed, the heart of Aratus failed him, and made him halt on the brink. This was too much for the gallant soul of Lydiadas; to be called on, at the bidding of a successful rival, to throw away a victory at the very gates of his native city, was a sacrifice to strict military discipline which it was hardly in human nature to offer. He called on all around him not to lose a victory which was already in their hands; he at least would not desert his country; let those who would not see Lydiadas die fighting alone against the enemy follow him to a certain triumph. At the head of his cavalry he dashed on, but at the head of his cavalry alone; and after a sharp struggle Lydiadas fell fighting within sight of the walls of Megalopolis.—*Freeman.*

II. *Questions on Grammar arising out of the prescribed books:—*

1. Parse fully *ὤρθου, πεφαργμένος, νέατον, βλάστοι, μέθες, κατέπτηχε, ὑποσχέσθαι, ἐκπέπραται, δεῖνος, πρόοισθε.*

2. Illustrate from the *Antigone* of Sophocles and the *Philippics* of Demosthenes the uses of the following particles or combinations of particles, viz., *ἀλλὰ γάρ, ἀλλ' οὖν, ἦ μήν, καὶ μήν, μὲν οὖν, ἀλλὰ νὴ Δία, ὅπως μή, μέντοι.*

3. Illustrate from the same sources the modes of putting a negative command in Greek.

4. Explain noteworthy points of grammar in the following passages, viz. :—

(*a*) *ἐγὼ δὲ τούτοις μὲν ἐρρῶσθαι λέγω.*

(*b*) *οἱ δὲ σύμμαχοι τεθνᾶσι τῷ δέει τοὺς τοιούτους ἀποστόλους.*

(*c*) *κέκρισθε μόνοι μηδενὸς ἂν κέρδους τὰ κοινὰ δίκαια προέσθαι.*

(*d*) *οὔτ' ἂν δυναίμην μήτ' ἐπισταίμην λέγειν.*

(*e*) *καλῶς σὺ μὲν τοῖς, τοῖς δ' ἐγὼ 'δοκουν φρονεῖν.*

(*f*) *ἀλλ' ἄνδρα κεἰ τις ᾖ σοφός, τὸ μανθάνειν πόλλ' αἰσχρὸν οὐδέν.*

III. *General questions on Grammar :—*

1. Write down the verbals in -*τέος* connected with the following verbs, viz., *τρέχω, κτίζω, μιαίνω, παρίημι, ἐπέχω, ἔξειμι.*

2. Give the rules of Greek *oratio obliqua,* and show in what respects they are laxer than the corresponding rules in Latin.

3. Indicate the different forms for expressing the agent after a Greek passive verb.

4. Explain points of syntax in the following passages, viz.:—

(*a*) *δείδω μὴ δὴ πάντα θεὰ νημερτέα εἶπεν.*

(*b*) *κἀμοὶ θέλοντι τοῦτ' ἂν ἦν.*

(*c*) *οὐδενὸς ὅτου πράγματος οὐκ ἠμέλει.*

(*d*) *οὐ δεινὰ ἂν ἐγὼ πάθοιμι εἰ μὴ ἔξεσταί μοι ἀπιέναι;*

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER a.

1. What is meant by the *growth* of a language? Sketch the internal and external growth of the English Language from the 5th to the end of the 16th century, marking the important Epochs and Periods by Dates. Assign names to the language of each Period.

2. Describe the English of the times before the Norman Conquest in regard both to its vocabulary and to its grammatical or structural character.

3. Sketch the history, from its commencement down to the present day, of the superinduction of the Latin element upon the original basis of the language. Add your estimate of the *extent* to which the vocabulary of the language has been affected by the intrusion of the foreign element.

4. In the earliest forms of Old English how were the plurals of nouns and the past tenses of verbs respectively formed? Give examples.

5. Translate the following passages, adding grammatical notes:—

1. For þon þa þære tide nealæcte his gewitenesse and forðfore, þa wæs he feowertyne dagum ær þæt he wæs licumlicre untrymnesse þrycced and hefigad, hwæþere to þon gemetliche þæt he ealle þa tid mihte ge sprecan ge gangan.

2. And þa he þanon eode, he ferde on his eþel and him folgedon hys leorning cnyhtas. And gewordenum reste dæge, he ongan on gesomnunge lǽran: and mænige gehyrdon, and wundredon on his lǽre, and cwædon: Hwanon synd þyssum ealle þas þing? And hwæt ys se wisdom þe hym geseald ys, and swylce mihta þe þurh his handa gewordene synd?

3. Äðelstan cyning, eorla drihten,
beorna beâhgifa, and his broðor eâc
Eâdmund äðeling ealdorlange tŷr
geslôgon ät säcoe sveorda ecgum
ymbe Brunanburh; bordꝟeall clufon
heovon heaðolinde hanvera lâfum
eaforan ’Eadveardes.

4. Þe grete god in his greme· byginneȝ onlofte;
To waken wedereȝ so wylde· þe wyndeȝ he calleȝ,
& þay wroþely up-wafte· & wrastled togeder,
Fro fawre half of þe folde· flytande loude.
Clowdeȝ clustered bytwene· kesten up torres,
þat þe þik þunder-þrast· þirled hem ofte.

6. Give the bibliographical history of the *Essays of Elia*. How did they come to be so called? What clues do they furnish, however disguised, to the life and character of their author? "It is the harmonious concord of dissonances in Lamb that is the secret of his attraction." Indicate passages in the *Essays* which illustrate this admirable criticism. Explain the following allusions:—

a. This anecdote of herself I had in the year 1800 from the mouth of the late Mrs. Crawford.
b. Shakspeare foresaw him, when he framed his fools and jesters.
c. I sometimes wish I had been that Bank clerk.
d. In the sweetest of his poems, the *Epitaphium in Canem*, or *Dog's Epitaph*.
e. Those who use this proverb can never have seen Mrs. Conrady.

7. (1) To put down Richard, that sweet lovely rose,
And plant this thorn, this canker Bolingbroke.
(2) The shore at Ravenspurg.
(3) The great magician, damned Glendower
Whose daughter as we hear the Earl of March
Hath lately married.

Explain, with dates, the allusions to persons and events contained in the above passages. Why was Henry IV. called Bolingbroke? How long did the rebellion of Glendower last? What Chronicle does Shakespeare chiefly follow in *Henry IV.*? Can you give any instances of a transfer of a passage from one to the other?

8. Give the respective dates of the Plays before us. What reasons have been brought forward for supposing that the character of Falstaff was drawn from a real personage? Do any passages in the play warrant such a conclusion?

9. Paraphrase and explain:—

The skipping King he ambled up and down
With shallow jesters and rash bavin wits,
Soon kindled and soon burned: carded his state;
Mingled his royalty with carping fools,
Had his great name profaned with their scorns:
And gave his countenance, against his name,
To laugh at gibing boys, and stand the push
Of every beardless vain comparative:
Grew a companion to the common streets,
Enfeoff'd himself to popularity.

Also, annotate the following:—

a. A Corinthian, a lad of mettle.
b. This is no world
To play with mammets and to tilt with lips.
c. Turk Gregory never did such deeds in arms as I have done this day.
d. Burgomasters and great oneyers.
e. I was never manned with an agate till now.
f. I saw him break Skogan's head.

10. Sketch the character of Henry V. as Shakespeare seems to you to have conceived it. Quote passages in support of your view. How do we fix the date of its composition? Describe the functions of the Chorus, showing the parts performed by it in Acts I. & V. Compare the scenes in the French and English Camps respectively on the night before Agincourt as described by Shakespeare. Whence did Shakespeare gather his historical facts in this Play?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER b.

1. Write an Essay on ONE of the following subjects:—
   (*a*) Addison, Goldsmith, and Charles Lamb compared and contrasted as Essayists.
   (*b*) The character of Sir John Falstaff as delineated by Shakespeare.

2. To what causes would you attribute the great predominance of Prose over Poetry in the reign of Queen Anne? Name, with dates, the principal productions in each branch of literature during this period.

3. Trace the rise and progress of English Journalism in the early years of this reign, with special reference to Defoe, Richard Steele, and Addison.

4. What are the merits of Defoe as a writer and whence is he supposed to have derived the idea of *Robinson Crusoe*? Was he an eye-witness of the Plague of London he has so graphically described?

5. Estimate the position of Addison as a Critic. Exhibit your acquaintance with his most important critical disquisitions. What proportion of the *Spectator* is Addison's own? Mention some of the principal subjects of his contributions to it.

[*Turn over.*

6. Pick out the characteristic excellences of Pope's *Essay on Criticism.* Quote as many illustrations of them as you can remember from the Poem itself. From whom did he borrow not only the idea but some of the choice expressions of the Poem? How was it received at the time? What did Addison say of it? What, Dr. Johnson? Show how profound has been its influence on the taste of the age and on succeeding generations.

> These rules, of old discovered, not devised,
> Are Nature still, but Nature methodised.

Do you or do you not consider these lines are applicable to the rules known as the "Dramatic Unities"? Give your reasons.

7. Sketch the history of the Drama during this reign. Discuss in particular the merits, and name the authors, of *Cato, The Fair Penitent, Revenge, A Bold Stroke for a Wife.*

8. Give as full an account as you can of the controversy which took place at this time on the relative merits of Ancient and Modern Learning. Name the principal writers who took part in it, and mention some of the arguments used on either side.

9 Give your estimate of Swift as a writer of English Prose. What do you know about *Gulliver's Travels* and the *Tale of a Tub*?

10. Give a brief account of the works or passages referred to under any six of the following headings: illustrating your remarks by quotations from, or specific references to, the most striking portions of those which you select.

Vision of Mirza. Sir Roger de Coverley's behaviour at the Assizes. Addison's Remarks on Wit. Cato's Soliloquy. The Judges and Courts of Lilliput. The description of the Robin in the "Seasons." The play Sir Roger de Coverley saw when he went to the theatre. The Characters in "Alciphron." Fill up the blank in the following exclamation of Swift's: "If the world had a dozen——I would burn my Gulliver's Travels." Pope's lines on Atossa. His description of a child. John Bull's Lawsuit.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER a.

Translation, Composition, and Grammar.

A. *Translate into English*:—

Par une nuit noire, noire, sans lune, sans étoile, sans ciel, sur la blancheur tremblotante d'une immense pente de neige, lentement se déroule une longue corde où des ombres craintives et toutes petites sont attachées à la file, précédées, à cent mètres, d'une lanterne en tache rouge presque au ras du sol. Des coups de piolet sonnant dans la neige dure, le roulement des glaçons détachés dérangent seuls le silence du névé où s'amortissent les pas de la caravane, puis de minute en minute un cri, une plainte étouffée, la chute d'un corps sur la glace et, tout de suite, une grosse voix qui répond du bout de la corde: "Allez doucement de tomber, Gonzague." Car le pauvre Bompard s'est décidé à suivre son ami Tartarin jusqu'au sommet du Mont-Blanc. Depuis deux heures du matin—il en est quatre à la montre à répétition du président—le malheureux courrier s'avance à tâtons, vrai forçat à la chaîne, traîné, poussé, vacillant et bronchant, contraint de retenir les exclamations diverses que lui arrache sa mésaventure, l'avalanche guettant de tous côtés et le moindre ébranlement, une vibration un peu forte de l'air cristallin, pouvant déterminer des tombées de neige ou de glace. Souffrir en silence, quel supplice pour un homme de Tarascon!—*A. Daudet.*

B. Composition.

Translate into French :—

The wide-spread plains of the Gran Chaco, shared between the Argentine and Bolivian States, during the rainy season, from October to March, present in many places the appearance of an Ocean studded thickly with verdant Islands, and yet a few only of these districts are subject to inundations. Many parts have a uniform vegetation, growing mainly one species alone. That vegetation is wonderfully rich and luxuriant. Here the traveller feels that he is in the very heart of the tropics, where everything—hills, rivers, and vegetation—is on a gigantic scale. So exuberant is the vegetable growth, that it becomes difficult to understand how so limited an area can produce and sustain such dense masses of plants and trees. And, in truth, the ground itself is insufficient for all its offspring. The stems of the trees are called upon to support the most varied kinds of climbers and creepers, which encircle them with a marvellously-shaded mantle of green, profusely strewn with flowers of every hue. One wanders for days together beneath the shade of these natural bowers, through which glimpses are but rarely obtained of the deep azure of the sky. Here, Major Horst tells us, he for the first time beheld the wonderfully artistic sack-shaped nests of the black-and-amber plumage troupial, whose song, however, is somewhat marred by the jarring accompaniment ot the shrill screech of countless flocks of parrots. He adds that, unless actually seen, it is quite impossible to form any idea of the amazing number of those noisy creatures, whose perpetual chatter drowns all other sounds, even the very roar of the torrent itself rushing wildly down the rocky sides of the hills.—*Bates*.

C. Grammar.

1. Translate : *un seau, un sceau* ; *le ver, le verre* ; *le lis, la lice* ; *le gué, le guet* ; *le fait, le faix*.

2. Say when personal pronouns used as object need not be repeated before every verb.

Translate : He esteems and honours you.—He has praised and flattered them.

3. Write in full the present indicative of *aller, jeter, fuir, mouvoir, boire*.

4. Give some instances of the idiomatic uses of the conditional.

5. Show, by giving examples, that the French language employs certain past participles as prepositions.

6. Translate into French :—

(*a*) There is nothing I would not do to oblige you.

(*b*) What signifies getting into a passion? Let us reason coolly.

(*c*) The patient is no better; they say he is rather growing worse.

(*d*) So slight a fault did not deserve so great a punishment.

(*e*) He is liked by all his friends because he is of a gay disposition.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER b.

Translation and Literary Appreciation.

A. *Translation*:—

I. Quand Paul fut sur le rivage, il voulut continuer sa route, chargé de sa sœur, et il se flattait de monter ainsi la montagne des Trois-Mamelles, qu'il voyait devant lui à une demi-lieue de là; mais bientôt les forces lui manquèrent, et il fut obligé de la mettre à terre, et de se reposer auprès d'elle. Virginie lui dit alors : " Mon frère, le jour baisse; tu as encore des forces, et les miennes me manquent; laisse-moi ici, et retourne seul à notre case, pour tranquilliser nos mères." "Oh! non," dit Paul; "je ne te quitterai pas. Si la nuit nous surprend dans ces bois, j'allumerai du feu; j'abattrai un palmiste; tu en mangeras le chou, et je ferai avec ses feuilles un ajoupa pour te mettre à l'abri."

1. What gave occasion to the above circumstances?

2. Narrate the *dénouement* of the story of 'Paul et Virginie.'

II. Make a short analysis of 'La Chaumière indienne' and give your appreciation of this little tale.

[*Turn over.*

III. *Translate into English* :—

La pensée de l'auteur des 'Etudes de la Nature' est tout entière dans ces paroles: "O mon Dieu, donnez à ces travaux d'un homme, je ne dis pas la durée ou l'esprit de vie, mais la fraîcheur du moindre de vos ouvrages! Que leurs grâces divines passent dans mes écrits, et ramènent mon siècle à vous, comme elle m'y ont ramené moi-même!"

How did the author accomplish his task?

IV. *Translate into English* :—

NÉRINE.

Ne verrai-je jamais les femmes détrompées
De ces colifichets, de ces fades poupées,
Qui n'ont, pour imposer, qu'un grand air débraillé,
Un nez de tous côtés de tabac barbouillé,
Une lèvre qu'on mord pour rendre plus vermeille,
Un chapeau chiffonné qui tombe sur l'oreille,
Une longue steinkerque à replis tortueux,
Un haut-de-chausse bas prêt à tomber sous eux;
Qui, faisant le gros dos, la main dans la ceinture,
Viennent, pour tout mérite, étaler leur figure?

Translate and explain:

(1) Monsieur le professeur, avecque vos raisons,
Il faudroit vous loger aux Petites-Maisons.

(2) Sortiras-tu d'ici, vrai gibier de potence?

(3) Et monsieur prend la chèvre; il met tout en déroute,
Fait le petit mutin.

(4) Je vous en avertis, c'est un futé matois.

(5) Et prend, pour remplacer ses meubles écartés,
Des diamants du temple, et des plats argentés.

V. Examine the character of Le Grondeur, and say how the play was written.

B. *Period appointed for Special Study.*

1. Give an account of the *Essais* of Montaigne.

2. Give an estimate of Rabelais as a *conteur*.

3. "Au nom de Ronsard se rattache le souvenir de la plus fameuse révolution qu'ait vue notre histoire littéraire."

When did this revolution begin, and who were those who helped most to accomplish it?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

GERMAN.

Examiner: Prof. Althaus, Ph.D.

PAPER a.

I. *Translate into German:—*

A.

Walter Scott, the ninth of twelve children, of whom the first six died in early childhood, was born in Edinburgh, on the 15th of August, 1771. Of the six later-born children, all but one were boys, and the one sister was a somewhat querulous invalid, whom he seems to have pitied almost more than he loved. At the age of eighteen months the boy had a teething-fever, ending in a life-long lameness; and this was the reason why the child was sent to reside with his grandfather—the speculative grandfather, who had doubled his capital by buying a racehorse instead of sheep—at Sandy Knowe, near the ruined tower of Smailholm, celebrated afterwards in his ballad of *The Eve of St. John*, in the neighbourhood of some fine crags. To these crags the housemaid, sent from Edinburgh to look after him, used to carry him up, with a design—due to incipient insanity—of murdering the child there, and burying him in the moss. Of course, the maid was dismissed. After this the child used to be sent out, when the weather was fine, in the safer charge of the shepherd, who would often lay him beside the sheep. Long afterwards Scott told Mr. Skene, during an excursion with Turner, the great painter, who was drawing his illustration of Smailholm tower for one of Scott's works, that the habit of lying on the turf there among the sheep and the lambs had given his mind a peculiar tenderness for these animals, which it had ever since retained. Being forgotten one day upon the knolls, when a thunderstorm came on, his aunt ran out to bring him in, and found him shouting "Bonny! bonny!" at every flash of lightning. One of the old servants at Sandy Knowe spoke of the child long afterwards as "a sweet-tempered bairn, a darling with all about the house," and certainly the miniature taken of him in his seventh year confirms the impression thus given. It is sweet-tempered above everything, and only the long upper lip and large mouth, derived from his ancestress, Meg Murray, convey the promise of the power that was in him.—*R. H. Hutton.*

B.

The soldiers took aim. They only feign kindness. She guesses everything from his looks. This man is a thorn in my side. Out of sight, out of mind. It does not matter much. You have had a narrow escape. How much will you lay? It is the same to me. Be of good cheer, my friends. A good word always tells. An honest man is as good as his word. Don't do it on any account. They have made an April fool of him. Never mind people's talk.

II. *Translate into English* :—

A.

Die Leichtigkeit mit der es dem Prinzen gelungen war, den Betrug zu entdecken, ſchien ihn ſelbſt überraſcht zu haben. In ſeinem Kopfe hatten ſich Wahrheit und Irrthum noch nicht ſo genau von einander geſondert, daß es ihm nicht oft begegnet wäre, die Stützen der einen mit den Stützen des andern zu verwechſeln; daher kam es, daß der Schlag, der ſeinen Glauben an Wunder ſtürzte, das ganze Gebäude ſeines religiöſen Glaubens zugleich zum Wanken brachte. Es erging. ihm hier wie einem unerfahrenen Menſchen, der in der Freundſchaft oder Liebe hintergangen worden, weil er ſchlecht gewählt hatte, und der nun ſeinen Glauben an dieſe Empfindungen überhaupt ſinken läßt, weil er bloße Zufälligkeiten für weſentliche Eigenſchaften und Kennzeichen derſelben aufnimmt. Ein entlarvter Betrug machte ihm auch die Wahrheit verdächtig, weil er ſich die Wahrheit unglücklicher Weiſe durch gleich ſchlechte Gründe bewieſen hatte. Dieſer vermeintliche Triumph gefiel ihm um ſo mehr je ſchwerer der Druck geweſen wovon er ihn zu befreien ſchien. Von dieſem Zeitpunkt an regte ſich eine Zweifelſucht in ihm, die auch das Ehrwürdigſte nicht verſchonte.

Es halfen mehrere Dinge zuſammen, ihn in dieſer Gemüthslage zu erhalten und noch mehr darin zu befeſtigen. Die Einſamkeit in der er bisher gelebt hatte hörte jezt auf, und mußte einer zerſtreuungsvollen Lebensart Platz machen. Sein Stand war entdeckt. Aufmerkſamkeiten die er erwiedern mußte, Etikette die er ſeinem Range ſchuldig war, riſſen ihn unvermerkt in den Wirbel der großen Welt. Sein Stand ſowol als ſeine perſönlichen Eigenſchaften öffneten ihm die geiſtvollſten Zirkel in Venedig; bald ſah er ſich mit den hellſten Köpfen der Republik, Gelehrten ſowol als Staatsmännern, in Verbindung. Dies zwang ihn, den einförmigen, engen Kreis zu erweitern, in welchen ſein Geiſt ſich bisher eingeſchloſſen hatte. Er fing an, die Armuth und Beſchränktheit ſeiner Begriffe wahrzunehmen und das Bedürfniß höherer Bildung zu fühlen. Die altmodiſche Form ſeines Geiſtes, von ſo vielen Vorzügen ſie auch ſonſt begleitet war, ſtand mit den gangbaren Begriffen der Geſellſchaft in einem nachtheiligen Contraſt, und ſeine Fremdheit in den bekannteſten Dingen ſetzte ihn zuweilen dem Lächerlichen aus. Nichts fürchtete er ſo ſehr als das Lächerliche. Das ungünſtige Vorurtheil, das auf ſeinem Geburtslande haftete, ſchien ihm eine Aufforderung zu ſein, es in ſeiner Perſon zu widerlegen.

Schiller: „Der Geiſterſeher.“

B.

Süß iſt, fröhlicher Lenz, deiner Begeiſtrung Hauch,
Wenn die Flur dich gebiert, wenn dein Odem ſich ſanft
In der Jünglinge Herzen
Und die Herzen der Mädchen gießt.

Ach, du machſt das Gefühl ſiegend, es ſteigt durch dich
Jede blühende Bruſt ſchöner und bebender,
Lauter redet der Liebe
Nun entzauberter Mund durch dich.

Lieblich winket der Wein wenn er Empfindungen,
Beſſre, ſanftere Luſt, wenn er Gedanken winkt,
Im ſokratiſchen Becher
Von der thauenden Roſ’ umkränzt;

Wenn er dringt in das Herz, und zu Entſchließungen
Die der Säufer verkennt, jeden Gedanken weckt,
Wenn er lehret verachten
Was nicht würdig des Weiſen iſt.

Reizvoll klinget des Ruhms lockender Silberton
In das ſchlagende Herz, und die Unſterblichkeit
Iſt ein großer Gedanke,
Iſt des Schweißes der Edlen werth!

Durch der Lieder Gewalt bei der Urenkelin
Sohn und Tochter noch ſein, mit der Entzückung Ton
Oft beim Namen genennet,
Oft gerufen vom Grabe her,

Dann ihr ſanfteres Herz bilden und, Liebe, dich,
Fromme Tugend, dich auch gießen in's ſanfte Herz,
Iſt, beim Himmel! nicht wenig,
Iſt des Schweißes der Edlen werth!

Aber ſüßer iſt noch, ſchöner und reizender,
In dem Arme des Freunds wiſſen ein Freund zu ſein!
So das Leben genießen
Nicht unwürdig der Ewigkeit.

Treuer Zärtlichkeit voll, in den Umſchattungen,
In den Lüften des Walds und mit geſenktem Blick
Auf die ſilberne Welle,
That ich ſchweigend den frommen Wunſch:

„Wäret ihr auch bei uns, die ihr mich ferne liebt,
In des Vaterlands Schooß ferne von uns verſtreut,
Die in ſeligen Stunden
Meine ſuchende Seele fand:

„O ſo bauten wir hier Hütten der Freundſchaft uns!
Ewig wohnten wir hier, ewig! der Schattenwald
Wandelt' uns ſich in Tempe,
Jenes Thal in Elyſium!“

Klopſtock.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

GERMAN.

Examiner: Prof. ALTHAUS, Ph.D.

PAPER b.

I. *Grammatical Questions* :—

1. State in detail the idiomatic uses of the German definite and indefinite articles, as distinguished from the English.

2. Sketch a table of classification of the strong verbs.

3. By changes of root-vowel form transitive verbs from the intransitives fahren, fallen, liegen, ſchwimmen, ſaugen, ſitzen, ſpringen, trinken, wiegen, and explain the differences in meaning and in conjugation of both sets of verbs.

4. Explain, and illustrate by German sentences, the different translations of *when* by wann, wenn, als, and worauf.

5. What prepositions are used with German verbs denoting (*a*) fear or warning; (*b*) joy, wonder, and vexation; (*c*) want and doubt; (*d*) movement and aspiration? Form sentences to illustrate your answer.

6. Point out all the instances in which inversion of subject and verb occurs, and give examples of each.

7. Form as many sentences as you can illustrating the modes in which English participial clauses, having a conjunctive or a relative meaning and denoting either time or cause, are expressed in German.

II. *Questions on Schiller's* „Der Geiſterſeher" *and on Klopstock's* „Oden":—

1. To which period of Schiller's literary activity does „Der Geiſterſeher" belong, and which contemporaneous occurrences induced Schiller to treat this subject?

2. Give an outline of the story told in „Der Geiſterſeher," with comments on its form and style.

3. Mention the principal subjects treated in Klopstock's „Oden," and show in what way they are of biographical as well as historical interest.

4. Point out any peculiarities of language and metre you may have noticed in Klopstock's „Oden."

III. *German Literature*:—

(These Questions may be answered either in English or in German.)

1. Wie entſtand und wie verlief „der Kampf der Leipziger und der Schweizer"? und was war ſeine Bedeutung für die Entwicklung der deutſchen Literatur im 18ten Jahrhundert?

2. Der Urſprung (*a*) des „Leipziger Dichterbundes,“ (*b*) des „Preußiſchen Dichterbundes,“ deren hervorragendſte Mitglieder und ihre Werke.

3. Durch welche Eigenſchaften des Genies und des Charakters machte Klopſtock in der deutſchen Literatur Epoche? Wodurch unterſchied er ſich von Wieland?

4. Ueberblick über Goethe's Leben und Gruppirung ſeiner bedeutendſten Werke.

5. Schiller als Dichter und Menſch.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1893.

ENGLISH HISTORY, 1789-1850.

Examiner: F. York Powell, M.A.

1. Examine the aims and careers of Fox and Burke, Paine and Cobbett, during the Revolutionary War.

2. What causes, social and political, brought about (1) the Irish Rebellion, (2) the Parliamentary union with Ireland?

3. What part did Great Britain take in the Spanish Peninsular War? Give an account of the conduct of this war under Wellington.

4. What causes led to the passing of the Reform Bill of 1832? What are the chief enactments of that measure? Notice its consequences.

5. Explain the foreign policy of the British Government with respect to (1) Greece, (2) the Low Countries, (3) Spain, and (4) Italy from 1814 to 1832.

6. "Financial reform has been a keynote of British policy during this period." Explain the efforts of successive ministers from Pitt to Peel in this direction.

[*Turn over.*

7. "The colonization of a new southern continent and archipelago and the acquisition of the temperate parts of Africa have been perhaps the most important work of Great Britain in the first part of the 19th century." How did she secure (1) South Africa and (2) Australia?

8. How has the factory system affected the workman in Great Britain?

9. Give an account of the Chartist agitation. How far have its ends been secured?

10. What principal advances in science and discovery have been made by Englishmen during this period?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1893.

POLITICAL ECONOMY.

Examiner: F. York Powell, M.A.

1. Explain the use of *paper money* (1) in home currency, (2) in international exchange.

2. What economic arguments are urged for and against (1) the employment of foreign labour, (2) the imposition of a progressive income-tax, (3) a permanent land-tax?

3. Sketch the history and explain the principles of the English Poor Law. What measures have been found most effective in New Zealand in preventing and checking pauperism?

4. What economic difficulties have arisen owing to the fall of silver? What has been the policy of (1) France, (2) the United States with regard to this question?

5. "Free Trade is a question of expediency."
"Free trade must benefit every nation that accepts it."
Discuss these opinions and indicate your own view.

[*Turn over.*

6. Upon what causes does the *rate of interest* in the Colonies depend?

7. "Government interference with the exchange of *commodities* has generally proved a mistake. Government interference with the exchange of *services* has been generally acceptable." Examine this opinion and illustrate your answer from facts.

8. How is it that land in England often shows greater *produce* but less *profit* to the farmer than land in the Colonies?

9. Why has *Profit* advanced more rapidly than *Wages* during the present century?

UNIVERSITY OF NEW ZEALAND.

B.A. & LL.B. PASS EXAMINATION, 1893.

JURISPRUDENCE.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. Enumerate and distinguish the different classes which are popularly called "Laws," and specify the characteristics of those that form the proper subject of Jurisprudence.

2. Define "ownership." Distinguish it from "estate in fee simple" and *emphyteusis*.

3. Distinguish between an "act" and its consequences with reference to volition and intention.

4. State Austin's view of the relation of Custom to Law.

5. Distinguish between a Confederation of States and a Federal State.

6. Explain the different meanings of the terms "*dolus*" and "malice."

7. What is the distinction between *mala in se* and *mala prohibita*? Is the distinction of any juridical value?

[*Turn over*.

8. What confusion sometimes arises between Contract and Conveyance? Is there any difference in this respect between English and Roman Law?

9. What are the difficulties in the way of a codification of English Law? What partial attempts have been made to codify English Law?

10. Criticize the position assigned by Austin to "Sanctioning Rights" in the classification of Law.

UNIVERSITY OF NEW ZEALAND.

B.A. & LL.B. PASS EXAMINATION, 1893.

CONSTITUTIONAL HISTORY.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. How is the right to personal freedom protected under the British Constitution?

2. "Martial Law, in the proper sense of that term, is unknown to the Law of England." Explain this statement. In what sense is Martial Law recognized by English Law?

3. What feudal rights over land were possessed by the Crown in the reign of Charles I., and how were they finally disposed of by Parliament?

4. State the leading provisions of the Colonial Laws Act, 1865.

5. State the points and leading arguments in the following cases:—

    (1) Sommersett's case.
    (2) Entick *v.* Carrington.

[*Turn over.*

6. Describe briefly the steps by which the electorate of the House of Commons has been extended during the present century.

7. Enumerate the statutory violations of religous liberty under the Stuarts.

8. What were the leading provisions of the Act of Settlement?

9. Explain and prove the doctrine of the Sovereignty of Parliament.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

PURE MATHEMATICS.

PAPER a. GEOMETRY AND TRIGONOMETRY.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. If two triangles have two sides of the one equal to two sides of the other, each to each, and have also the angles contained by those sides equal to one another, prove that the bases are also equal.

Equal lengths AF, BD, CE are taken along the sides AB, BC, CA of an equilateral triangle ABC and the points D, E, F are joined. Prove that the triangle DEF is equilateral.

2. Prove that in every triangle the square on the side subtending an acute angle is less than the squares on the sides containing that angle by twice the rectangle contained by either of these sides and the straight line intercepted between the perpendicular let fall on it from the opposite angle and the acute angle.

3. Show how to find the centre of a given circle.

If a segment only of the circle is given, find the centre.

4. If from any point without a circle there be drawn two straight lines, one of which meets the circle and the other

[*Turn over.*

cuts it, and if the rectangle contained by the whole line which cuts the circle and the part of it without the circle be equal to the square on the line which meets the circle, prove that the line which meets the circle touches it.

5. When is the ratio of two magnitudes equal to the ratio of two other magnitudes?

If four straight lines are proportional, prove that the rectangle contained by the extremes is equal to the rectangle contained by the means.

6. Find the number of degrees in the angle subtended at the centre of a circle whose radius is 3 feet by an arc whose length is 10 inches.

One angle of a triangle is expressed in circular measure, another in degrees, and the third in grades, and each is represented by the same figures. Find the angle expressed in circular measure.

7. Define the tangent of an angle and trace its changes in magnitude and sign as the angle increases from zero through four right angles.

Write down the general value of θ when $\sec\theta = -2$.

Prove the equality

$$\sin^3\theta \sec\theta + \cos^3\theta \operatorname{cosec}\theta = \tan\theta + \cot\theta - 2\sin\theta\cos\theta.$$

8. Prove that

$$\cos A - \cos B = -2\sin\tfrac{1}{2}(A-B)\sin\tfrac{1}{2}(A+B),$$
$$\sin^2 A - \sin^2 B = \sin(A+B)\sin(A-B),$$
$$\sin 3A \sin A = \sin^2 2A - \sin^2 A.$$

9. Two objects are visible on the other side of a river and their distance apart is to be determined by measuring lengths and angles on this side of the river, the objects and all the measurements being supposed to be in a horizontal plane. Show how this may be done and state the formulæ to be used in solving the triangles.

10. Prove that the logarithm of the product of two numbers is equal to the sum of the logarithms of the separate numbers. Is this true for all bases?

Find the tabular logarithmic sine of 15° 30′ 20″, having given

$$L\sin 15^\circ\,30' = 9{\cdot}4268988.$$
$$L\sin 15^\circ\,31' = 9{\cdot}4273541.$$

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

PURE MATHEMATICS.

PAPER b. ALGEBRA.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. What alteration is made in

$$X = x^2 + y^2 + z^2 - xy - yz - zx$$

when x, y, z are each increased by the same quantity? Show also that $2X$ may be expressed as the sum of three squares.

2. Divide $\quad x - 2x^{\frac{3}{4}} + x^{\frac{1}{2}}$ by $x^{\frac{1}{2}} - x^{\frac{1}{4}}$
and $\quad 2(x^5 + y^5 + z^5) - 5xyz(x^2 + y^2 + z^2)$ by $x + y + z$.

3. Find the factors of $x^2 - 13xy + 40y^2$ and simplify

$$\frac{4(x+y+z)^2 + (y+z)^2 + (z+x)^2 + (x+y)^2}{(x+y+2z)^2 + (x+2y+z)^2 + (2x+y+z)^2},$$

$$\frac{(x+y+z)^5 - (x+y-z)^5 - (y+z-x)^5 - (z+x-y)^5}{x^2+y^2+z^2}.$$

4. Add together the fractions

$$\frac{xy+y^2}{x^2-y^2},\ \frac{-2xy-2y^2}{x^2-xy-2y^2},\ \frac{xy+2y^2}{x^2-xy-6y^2}$$

and simplify

$$\frac{(x^2+1)^2-x^2}{x^6-1}.$$

5. Solve the equations

$$\frac{x+1}{x+3}-\frac{1}{2}\frac{x-1}{x+2}=\frac{1}{2}.$$

$$\left.\begin{aligned} 4x+2y &= 8xy \\ 5x+3y &= 11xy \end{aligned}\right\}.$$

$$(x^2+x+2)^{\frac{1}{2}}-(x^2+x-1)^{\frac{1}{2}}=1.$$

6. Show that a quadratic equation cannot have more than two roots. Form the quadratic whose two roots are $\frac{1}{2}$ and $-\frac{1}{3}$.

Show that $\frac{x^2+18x-9}{x^2+4x-2}$ can have no real value between $\frac{9}{2}$ and $\frac{10}{3}$ if x is real.

7. If $a:b::c:d$ prove that $a+mb:a-mb::c+md:c-md$.

Prove also

$$\frac{a^3+c^3}{ac^2-a^2c}=\frac{b^3+d^3}{bd^2-b^2d}.$$

8. Given three quantities, A, B, C, state tests by which it may be determined whether they are (1) in arithmetical progression, (2) in geometrical progression, and (3) in harmonical progression.

What kind of progression do the reciprocals of the terms of a geometrical progression form?

The first term of an arithmetical progression is unity; find

the common difference when it is given that the first, second, and twentieth terms form a geometrical progression.

9. Investigate an expression for the sum of an arithmetical progression.

The first and tenth terms of an arithmetical progression are respectively -2 and 57; find the common difference.

10. Write down the coefficient of x^r in the expansion of $(1-x)^{-n}$. Find r in terms of n when the ratio of the coefficients of x^r and x^{r-1} is equal to 2.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

APPLIED MATHEMATICS.

MECHANICS AND HYDROSTATICS.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. Show how to resolve a force (1) into two components at right angles, (2) into two oblique components.

A weight rests on a rough horizontal plane and is just moved along the plane by a force which acts at an angle of 45° to the horizon. If the friction is equal to 50 lbs., find the force.

2. Two given forces which are not parallel act on a body in one plane. Show that if any one point on a certain straight line is fixed the body is in equilibrium. Show also how to construct this straight line.

3. A heavy particle is placed on a smooth plane inclined to the horizon at an angle of 30°, and is supported by a force P acting in any given direction. Find the pressure R on the plane. Determine also the inclination of P to the plane when (1) $R=P$ and (2) $R=P\sqrt{2}$.

4. Two parallel and unequal forces act on a body; find the position and magnitude of their resultant.

The middle points of the sides BC, CA, AB are D, E, F, and two forces are represented in magnitude and direction by AB and ED. Show that their resultant divides CF in the ratio 5 : 1.

[*Turn over.*

☞ 5. A particle moves from rest at A in a straight line AB with a given uniform acceleration. Investigate the equation connecting the velocity and the space described.

If the velocities at two points are respectively 2 feet per second and 20 yards per minute and the space between is 5 feet, find the acceleration and the time of transit. State also the ratio of the acceleration to that due to gravity.

6. A particle starting from rest at the highest point A of a given vertical circle describes any smooth chord AB cutting the horizontal diameter in C. Show that the time of describing AB and the velocity at C are the same for all chords. Show also that the time of describing AC is inversely proportional to AB.

7. Show that the pressures at any two points of a homogeneous fluid in the same horizontal line are equal.

☞ A rectangle, whose sides AB, BC are respectively a and b feet, has one side AB in the surface of a fluid of given density, and its plane is inclined at an angle θ to the horizon. Find the pressure on the area. If the horizontal line EF divide the area into two parts on which the pressures are equal, find the ratio of the distances of EF from AB and CD, the pressure of the air being neglected.

8. Show that the resultant pressure on a floating body is vertical.

A cylinder of radius a is partially filled with water. A smaller cylinder, whose weight is equal to that of a volume V of water, is then placed floating in the water. Determine how much the water will rise in the larger cylinder.

9. Show how the common hydrometer is used to compare the specific gravities of two fluids.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

PHYSICAL SCIENCE.

PAPER a. HEAT, SOUND, AND LIGHT.

Examiner: Principal GARNETT, D.C.L.

1. What is a *calorie*? Compare the effects of shaking up a pound of mercury originally at 100° C. with a pound of water at 0° C., and of mixing a pound of water at 100° C. with a pound of water at 0° C.

2. The heat produced by the combustion of a pound of a certain kind of coal is capable of raising 7500 lbs. of water through 1° C. Explain fully how this statement may be experimentally verified.

3. What is meant by the *coefficient of expansion* of a gas? State approximately its value for air, and point out how the more common gases differ one from another in their behaviour when heated.

4. What is the dew-point? Describe some instrument by which it may be determined, and point out the precautions necessary to secure an approximately accurate result.

5. Explain fully why saturated steam becomes partially condensed when expanding in the cylinder of an engine, unless special arrangements are made to prevent such condensation, and state what these arrangements usually are.

[*Turn over.*

6. You are provided with several feet of steel wire of given diameter, a set of weights with convenient means for attaching them to the wire, and some arrangement by which the elongation of the wire may be accurately measured. How would you determine the velocity of a sound-wave in the wire?

7. Four feet of aluminium wire are welded to the end of two feet of bronze wire of the same gauge, and the compound wire is supported at its ends and stretched so as to vibrate transversely. It is observed that the wire may be made to vibrate with a single node, and that at the point of junction of the aluminium and the bronze. Compare the densities of the two wires, explaining fully your method of calculation.

8. Explain the manner in which a sound-wave is transmitted through air, and point out the effect of the changes of temperature caused by the rapid changes of pressure.

9. Distinguish generally between convex and concave lenses, and explain fully how you would determine the focal length of a concave lens.

10. Two plane mirrors are placed so as to include an angle of 60°. A small object is placed between them at a distance of one inch from one mirror and $1\frac{1}{2}$ inches from the other. Make a careful sketch, showing the positions of all the images formed, and point out which of the images are perverted (reversed right and left).

11. Briefly describe the solar spectrum, and point out any differences which exist between solar spectra formed by a grating, a prism of flint-glass, and a prism containing bisulphide of carbon.

12. Describe some method of determining the wave-length corresponding to a particular quality of homogeneous light.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

PHYSICAL SCIENCE.

PAPER b. ELECTRICITY AND MAGNETISM.

Examiner: Principal GARNETT, D.C.L.

1. Point out the true difference between the electrics and non-electrics of Dr. Gilbert. How would you support a brass ball so that, when electrified, it should retain its charge as long as possible?

2. A conductor of irregular shape is charged and is at the same potential throughout. How will the density of the free charge and the force exerted by the charge close to the surface of the conductor change from point to point?

3. Explain clearly the meanings of the terms *volt, ampère,* and *ohm.* What is the relation between the ampères flowing in a conductor, the volts between its terminals, and the horse-power expended within its substance?

4. Describe the induction-machine of either Wimshurst or Voss, explaining its action. What is, approximately, the number of volts required to produce a spark an inch in length between two brass balls an inch in diameter?

5. Give a very brief account of Faraday's principal investigations in connection with electrolysis, and state the laws which he deduced from his experiments.

[*Turn over.*

6. Describe Peltier's cross. What precautions are necessary in order to render apparent the Peltier effect between antimony and bismuth?

7. Describe the method of measuring the resistance of a wire by means of Wheatstone's bridge.

Twenty lamps, each of 160 ohms resistance, are connected in parallel with a dynamo by means of continuous cables of one ohm resistance. What must be the E.M.F. between the terminals of the dynamo, in order that there may be 100 volts upon the lamps?

8. A dynamo was providing current at 300 volts to a motor half a mile distant, and, when the current was 90 ampères, it was found that the E.M.F. between the terminals of the motor was only 30 volts. What was the resistance (in ohms) of the cables used to convey the current? Assuming the conductors to have been of high-conductivity copper, state approximately their sectional area.

9. Make a sketch showing the relation between the magnetizing force and the magnetism induced in a piece of soft iron during a complete cycle, in which the magnetism is reversed and then restored to its original value. How would the diagram be affected if the soft iron were replaced by hard steel, and the same magnetizing forces applied?

10. Describe the Ruhmkorff coil, and explain why long sparks can be obtained from the secondary terminals when the primary circuit is "broken," but not when it is "made."

11. Describe *one* of the following instruments of Lord Kelvin (Sir W. Thomson):—

(*a*) The vertical electrostatic voltmeter.
(*b*) The centi-ampère balance.

12. Describe some useful form of storage cell. How would you test the *efficiency* of such a cell?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

CHEMISTRY.

PAPER a.

Examiner: Prof. T. E. Thorpe, Ph.D., B.Sc. (Vict.),
D.Sc. (Dubl.), F.R.S.

1. What is meant by the Valency of a substance? How is the property determined? By what conditions is it affected? Give examples.

2. Define the absorption-coefficient of a gas, and describe the method you would adopt in order to determine the solubility in water of oxygen, sulphur dioxide, and chlorine.

3. Explain precisely how you would attempt to determine the validity of the equation:

$$C + 2H_2SO_4 = CO_2 + 2SO_2 + 2H_2O.$$

4. Describe the modes of preparation and principal properties of the following substances:—sulphur trioxide; phosphorous oxide; nitrogen tetroxide; hydrogen dioxide; and carbonyl chloride.

5. I require 10 litres of carbon monoxide at 0° and 760 mm. pressure. How many grams of (1) oxalic acid; (2) of formic acid; and (3) of potassium ferrocyanide shall I need?

$$(K = 39{\cdot}0, \ Fe = 56.)$$

6. Name the chief sources of potash compounds. How are the following potash compounds obtained:—pearl-ash; nitre; yellow prussiate; caustic potash.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

CHEMISTRY.

PAPER b.

Examiner: Prof. T. E. Thorpe, Ph.D., B.Sc. (Vict.),
D.Sc. (Dubl.), F.R.S.

1. What is meant by the 'Law of Periodicity'? Give a short statement of its principles and explain and illustrate its services to Chemistry.

2. What weight of hydrochloric acid gas is produced in the manufacture of 100 tons of Salt-cake? What volume of gas escapes supposing the manufacturer to condense only 92 per cent. of the quantity evolved?

3. What is the nature and composition of Bleaching-powder? How is it prepared on the large scale and how is it acted upon by water and by hydrochloric acid? How may the amount of its active constituent be determined?

4. Write a short account of the chemistry of phosphorus with special reference to the modes of its occurrence in Nature; its connection with vegetable and animal life; its manufacture and uses; its various allotropic modifications; and its relations to nitrogen, arsenic, and antimony.

5. How is Cast-iron made? How is it converted into Wrought-iron and Steel?

6. Name the chief ores of Silver and describe two processes of extracting the metal.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

NATURAL SCIENCE.—(A) BIOLOGY.

I. General Biology.

Examiner: Prof. G. B. Howes, F.L.S., F.Z.S.

You are only permitted to answer four questions.

1. What is an epithelium? Briefly describe the leading types of epithelia met with in the animal body, and state in what parts of it they occur.

2. Describe the earlier stages in development of any animal and plant, and show how far they may be compared with each other.

3. What is understood by excretion, and how far may a common excretory function be said to be performed by animals and plants?

Or

Give an account of the respiratory organs and of respiration in any animal, and show in what manner the corresponding function is performed by the vegetable organism.

[*Turn over.*

4. Stimulation of the right or left half of the brain will induce muscular contraction on the opposite side of the body. Explain this phenomenon, describing the path taken by the stimulus, and the nature of the changes induced by it in the living muscle.

5. What do you understand by the Origin of Species? And in what manner do you believe it to have been brought about?

6. Describe what is meant by symbiosis, commensalism, and parasitism, giving examples of each.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

NATURAL SCIENCE.—(A. BIOLOGY).

(II.) a. BOTANY.

Examiner: Prof. I. BAYLEY BALFOUR, F.R.S.

1. Write an account of the life-history of *Vaucheria*. Compare it in essential features with that of *Peziza*.

2. Describe the structure of an annual ring of wood in the stem of a dicotyledonous tree. Explain the mode of formation of the annual ring.

3. Give the characters by which Leguminosæ are distinguished from Rosaceæ. Describe the forms of fruit found in each family.

4. Describe some of the chief metamorphoses exhibited by the leaf, and point out their value to the plants in which they occur.

5. Write an account of the structure and position of the sexual organs in *Marchantia* or *Lunularia*. Show how the sexual act is performed and describe the body which results from this.

6. Describe laticiferous tissue (milk-tubes). How is it developed? What is its use? Mention natural orders in which it is found.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

NATURAL SCIENCE.—(A) BIOLOGY.

(II.) b. Zoology.

Examiner: Prof. G. B. Howes, F.L.S., F.Z.S.

You are only permitted to answer five questions.

1. Describe and compare the life-histories of Amœba, Paramœcium, and of any Metazoon.

2. Briefly describe and compare the circulatory system of the Crayfish, Snail, a Lamellibranch, and a Bony Fish, in its especial relationships to the excretory and respiratory organs.

3. What are the distinctive characters of the Polyzoa and Brachiopoda, and with what other animals are these most nearly allied?

4. Describe and compare the osteo-cranium of a bony fish, a frog, and the rabbit, showing in what important respects the three differ from each other.

5. What is the known range in time of Mammals and Birds, and what are the especial characters of the earliest known members of the two great classes?

[*Turn over.*

6. What is the mesoderm, and to what does it give origin? Give an account of its development in an Echinoderm, Amphioxus, and any higher Metazoon.

7. Give an account of the fauna of any Islands known to you, in which its characters furnish data for estimating their mode of origin.

Or

Describe the limitations and distinctive characters of the Neotropical Region, and briefly compare it with the Australian one.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

NATURAL SCIENCE.

(B.) Geology, &c.

PAPER a.

Examiner: Prof. A. H. Green, M.A., F.R.S.

1. Give a general sketch of the more prominent physical features of the Eurasian and American Continents, and specify the more important differences between the two.

2. Describe two substances which enter largely into the composition of the earth's crust in which Carbon is an important constituent, and give an account of *one* form under which each occurs and the way in which that form was produced.

3. Explain what is meant by Fluxion Structure, how it is manifested, and how produced. In what way can a structure which closely simulates Fluxion Structure be set up in a rock?

4. Enumerate the main points of difference between Tetrabranchiate and Dibranchiate Cephalopods; and describe the hard parts of a fossil genus of each order.

5. Distinguish between a Sandstone and a Quartzite, and explain how the one may be converted into the other.

6. Give reasons why Lakes, Volcanic Cones, and lofty Mountain-ranges cannot be geologically of great antiquity; and give instances where we feel certain about the former existence of these physical features in localities where they are no longer to be found, explaining the grounds for our conviction.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

NATURAL SCIENCE.

(B.) GEOLOGY, &c.

PAPER b.

Examiner: Prof. A. H. GREEN, M.A., F.R.S.

1. Explain what is meant by a Basin of Inland Drainage. Describe an instance of such a basin. In what way does a study of such districts throw light on certain of the rocks of the Earth's Crust?

2. Give an account of the way in which the action of the weather affects (1) Granite, (2) Limestone, (3) Shale; and describe the general character of the surface features which result in each case.

3. What are the essential points of difference between Hills of Circumdenudation, Hills of Accumulation, and Mountain Ranges? Give illustrative diagrams and explain how the elevations of each class have been formed.

4. Give an account of the distinctive characters of the hard parts of a Lamellibranch, and describe two genera of Lamellibranchs which depart from the normal type of the class.

5. Give an account of the origin and geographical distribution of Globigerina Ooze, Radiolarian Ooze, and Diatomaceous Ooze.

6. Enumerate the main points of difference between the Plant-life of Palæozoic and Recent times; and compare one of the dominant types of Palæozoic plants with its present representative.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

MENTAL SCIENCE.

PAPER a. Psychology and Ethics.

Examiner: Prof. Andrew Seth, LL.D.

1. "All conscious states presuppose a subject." Explain this statement and give the arguments in support of it. What is the alternative position?

2. What is meant by the hypothesis of subconscious mental states, and what phenomena is it intended to explain? What other explanations have been given of the facts in question?

3. Carefully investigate the nature of Concepts with a view to determine the question at issue between Nominalism and Conceptualism.

4. Belief; Unbelief; Doubt. Accurately describe the mental states denoted by these words.

5. Trace the development of our *tactual* perception of space, distinguishing the different elements involved and the part played by each.

[*Turn over.*

6. What conclusions can be drawn as to visual perception from cases of those born blind and made to see?

7. Can there be conflicting duties? If so, on what principle are we to decide between them?

8. Examine into the psychological possibility of a strictly self-denying action.

9. What is meant by the Authority of Conscience, and whence is it derived? Give a critical statement of different theories.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. PASS EXAMINATION, 1893.

MENTAL SCIENCE.

PAPER b. Logic.

Examiner: Prof. ANDREW SETH, LL.D.

1. Give (1) the contradictory, (2) the converse, (3) the contrapositive, of the following propositions:—
   (*a*) None who fail can try again.
   (*b*) Only those who fail require to try again.
   (*c*) Many men are no scholars.

2. Distinguish Petitio Principii from legitimate reasoning. On what grounds has it sometimes been asserted that the syllogism is a petitio principii? Examine their validity.

3. (*a*) Prove from the general rules of syllogism that the conclusion must be negative in the second figure and particular in the third.
   (*b*) Construct a concrete syllogism in Camenes and exhibit the same reasoning in the second figure.

4. Exhibit the following arguments in logical form, stating mood and figure when they are valid and naming the fallacy when they seem invalid:—
   (*a*) Seeing is believing, therefore what is not seen cannot be believed.
   (*b*) No tale-bearer is to be trusted, and therefore no great talker is to be trusted, for all tale-bearers are great talkers.

[*Turn over.*

(*c*) That the dog was rabid was proved from the ***post-mortem*** examination, which showed clear traces of the disordered appetite invariably accompanying rabies in the canine species.

5. Give an example of a hypothetical, a disjunctive, and an inductive reasoning, and express each in the form of a categorical syllogism. Do you require to make any additional assumptions in doing so?

6. Explain what is meant by (*a*) the plurality of causes, (*b*) intermixture of effects. Show how these circumstances frustrate the working of the inductive methods, and how far, and by what means, such difficulties may be obviated.

7. Explain the Method of Residues, its relation to the other inductive methods, and its dependence on the law of universal causation.

8. Briefly explain and exemplify: sub-contrary opposition, non-connotative term, analytic judgment, differentia, ignoratio elenchi, fallacy of accident.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER a.

Translate into idiomatic English, with short elucidations of special difficulties in language or subject-matter:—

(A.) Cicero: Ad Atticum, IV. 3, §§ 3, 4.

Exin senatus postridie Idus: domi Clodius: egregius Marcellinus, omnes acres. Metellus calumnia dicendi tempus exemit adiuvante Appio, etiam hercule familiari tuo, de cuius constantia viri tuae verissimae litterae. Sestius furere. Ille postea, si comitia sua non fierent, urbi minari. Proposita Marcellini sententia, quam ille de scripto ita dixerat, ut totam nostram causam areae, incendiorum, periculi mei iudicio complecteretur eaque omnia comitiis anteferret, proscripsit se per omnes dies comitiales de caelo servaturum. Contiones turbulentae Metelli, temerariae Appii, furiosissimae Publii. Haec tamen summa: nisi Milo in campo obnuntiasset, comitia futura. Ante diem xii Kal. Decembr. Milo ante mediam noctem cum magna manu in campum venit. Clodius, cum haberet fugitivorum delectas copias, in campum ire non est ausus.

(B.) Livy: V., cc. 29, 30.

Haec propalam contionabundus in dies magis augebat iras hominum. Senatum vero incitare adversus legem haud desistebat: ne aliter descenderent in forum, cum dies ferendae legis venisset, quam ut qui meminissent sibi pro aris focisque et deum templis ac solo, in quo nati essent, dimicandum fore. nam quod ad se privatum attineat, si suae gloriae sibi inter dimicationem patriae meminisse sit fas, sibi amplum quoque esse urbem ab se captam frequentari, cotidie se frui monumento gloriae suae, et ante oculos habere urbem latam in triumpho suo, insistere omnes vestigiis laudum suarum, sed nefas ducere desertam ac relictam ab dis inmortalibus incoli urbem, et in captivo solo habitare populum Romanum, et victrice patria victam mutari. his adhortationibus principis concitati patres, senes iuvenesque, cum ferretur lex, agmine facto in forum venerunt, dissipatique per tribus suos quisque tribules prensantes orare cum lacrimis coepere.

(C.) Virgil: Aeneid, IV. 675–685.

'Hoc illud, germana, fuit? me fraude petebas?
hoc rogus iste mihi, hoc ignes araeque parabant?
quid primum deserta querar? comitemne sororem
sprevisti moriens? eadem me ad fata vocasses:
idem ambas ferro dolor atque eadem hora tulisset.
his etiam struxi manibus patriosque vocavi
voce deos, sic te ut posita crudelis abessem.
extinxti te meque, soror, populumque patresque
Sidonios urbemque tuam. date volnera lymphis
abluam et, extremus siquis super halitus errat,
ore legam.'

(D.) Juvenal: XI. 35–49.

Noscenda est mensura sui spectandaque rebus
In summis minimisque, etiam cum piscis emetur:
Ne mullum cupias, cum sit tibi gobio tantum
In loculis. Quis enim te deficiente crumena
Et crescente gula manet exitus, aere paterno
Ac rebus mersis in ventrem, fenoris atque
Argenti gravis et pecorum agrorumque capacem?
Talibus a dominis post cuncta novissimus exit
Annulus, et digito mendicat Pollio nudo.
Non praematuri cineres nec funus acerbum
Luxuriae, sed morte magis metuenda senectus.
Hi plerumque gradus: conducta pecunia Romae
Et coram dominis consumitur: inde ubi paulum
Nescio quid superest et pallet fenoris auctor,
Qui vertere solum, Baias et ad ostrea currunt.

(E.) Martial: VI. 31.

Laudat, amat, cantat nostros mea Roma libellos,
  Meque sinus omnis, me manus omnis habet.
Ecce rubet quidam, pallet, stupet, oscitat, odit.
  Hoc volo: nunc nobis carmina nostra placent.

---

1. Give a classification, with examples, of the ordinary forms of conditional sentences in Latin.

2. Give the dates at which Rome obtained control over (*a*) the Latin League, (*b*) Etruria, (*c*) the Samnites, (*d*) Sicily, (*e*) the Peloponnese.

3. What were the indigenous Italian forms of the drama before Greek influence prevailed ?

4. Sketch the character of *one* of the following, viz. *Marius, Cn. Pompeius, Tiberius, Seneca, Trajan.*

5. Show what precedents existed in the Republican period for the different powers which were conferred on the early emperors.

6. Write a brief account *either* of the revenues of the *aerarium* during the Republic, *or* of the struggle for the control of the *iudicia* from the Gracchi to Augustus.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER b.

I. *Translate into English, with brief notes on difficulties in the language or subject-matter :—*

(A.) Horace: Odes, I. 24, 13–20.

Quod si Threicio blandius Orpheo
Auditam moderere arboribus fidem,
Non vanae redeat sanguis imagini,
Quam virga semel horrida,

Non lenis precibus fata recludere,
Nigro conpulerit Mercurius gregi.
Durum: sed levius fit patientia
Quidquid corrigere est nefas.

(B.) Horace: Odes, III. 23, 13–20.

Te nihil attinet
Temptare multa caede bidentium
Parvos coronantem marino
Rore deos fragilique myrto.

Immunis aram si tetigit manus,
Non sumptuosa blandior hostia
Mollibit aversos Penates
Farre pio et saliente mica.

(C.) **Horace**: Carmen Saeculare, 17–24.

Diva, producas sobolem, patrumque
Prosperes decreta super iugandis
Feminis, prolisque novae feraci
Lege marita,

Certus undenos decies per annos
Orbis ut cantus referatque ludos
Ter die claro, totiensque grata
Nocte frequentes.

(D.) **Horace**: Epodes V. 87–90.

Venena magnum fas nefasque non valent
Convertere humanam vicem.
Diris agam vos; dira detestatio
Nulla expiatur victima.

1. Explain any special difficulties in the following extracts, *which need not be translated*:—

(*a*) Scriberis Vario fortis et hostium
Victor, Maeonii carminis alite.

(*b*) Deliberata morte ferocior;
Saevis Liburnis scilicet invidens
Privata deduci superbo
Non humilis mulier triumpho.

(*c*) Te multa prece, te prosequitur mero
Defuso pateris et Laribus tuum
Miscet numen, uti Graecia Castoris
Et magni memor Herculis.

(*d*) Quam neque finitimi valuerunt perdere Marsi,
Minacis aut Etrusca Porsenae manus,
Aemula nec virtus Capuae, nec Spartacus acer,
Novisque rebus infidelis Allobrox.

2. Explain briefly: *clavos trabales—insanientis sapientiae consultus—parum locuples continente ripa—parcis deripere horreo cessantem Bibuli consulis amphoram—nardo vina merebere—Ianum Quirini clausit—tauriformis Aufidus—carmen ad umbilicum adducere—sacra catenatus via.*

3. (*a*) What contemporary poets does Horace mention in the *Odes* and *Epodes* ? (*b*) In what way was the establishment of the Empire favourable to the prosperity of literature ? (*c*) Discuss the question whether Horace was deficient in real lyrical inspiration. (*d*) Whence did Horace derive his metres ? Give the scansion of the principal Asclepiad systems.

II. *Translate, with short notes on difficulties in language or subject-matter*:—

(A.) CICERO: De Natura Deorum, I. § 49.

Epicurus autem, qui res occultas et penitus abditas non modo viderit animo, sed etiam sic tractet, ut manu, docet eam esse vim et naturam deorum, ut primum non sensu, sed mente cernatur nec soliditate quadam nec ad numerum, ut ea, quae ille propter firmitatem *στερέμνια* appellat; sed imaginibus similitudine et transitione perceptis cum infinita simillimarum imaginum series ex innumerabilibus individuis existat et ad nos adfluat, cum maximis voluptatibus in eas imagines mentem intentam infixamque nostram intellegentiam capere, quae sit et beata natura et aeterna.

(B.) Ibid. II. § 36.

Quid autem est inscitius quam eam naturam, quae omnis res sit conplexa, non optumam dici, aut, cum sit optuma, non primum animantem esse, deinde rationis et consilii compotem, postremo sapientem? Qui enim potest aliter esse optuma? Neque enim, si stirpium similis sit aut etiam bestiarum, optuma putanda sit potius quam deterruma, nec vero, si rationis particeps sit nec sit tamen a principio sapiens, non sit deterior mundi potius quam humana condicio; homo enim sapiens fieri potest, mundus autem si in aeterno praeteriti temporis spatio fuit insipiens, numquam profecto sapientiam consequetur; ita erit homine deterior.

(C.) Ibid. II. § 118.

Sunt autem stellae natura flammeae; quocirca terrae, maris, aquarum vaporibus aluntur eis, qui a sole ex agris tepefactis et ex aquis excitantur, quibus altae renovataeque stellae atque omnis aether refundunt eadem et rursum trahunt indidem, nihil ut fere intereat aut admodum paululum, quod astrorum ignis et aetheris flamma consumit. Ex quo eventurum nostri putant id, de quo Panaetium addubitare dicebant, ut ad extremum omnis mundus ignesceret, cum umore consumpto neque terra ali posset nec remearet aer, cuius ortus aqua omni exhausta esse non posset; ita relinqui nihil praeter ignem, a quo rursum animante ac deo renovatio mundi fieret atque idem ornatus oreretur.

1. Explain special difficulties of any kind in the following extracts (*which need not be translated*):—

(*a*) Ex quo exsistit illud, multa esse probabilia, quae, quamquam non perciperentur, tamen quia ictum quendam haberent insignem et illustrem, eis sapientis vita regeretur.

(*b*) Fac imagines esse quibus pulsentur animi; species dumtaxat obicitur quaedam; num etiam cur ea beata sit, cur aeterna?

(*c*) Ementita et falsa plenaque erroris circum terras infra lunam, quae omnium ultima est, in terrisque versantur.

(*d*) Quid multitudinem suavitatemque piscium dicam? quid avium? Ex quibus tanta percipitur voluptas, ut interdum πρόνοια nostra Epicurea fuisse videatur.

2. Elucidate the following phrases:—'*ipse dixit*'—*intermundia*—*animi fusio universa*—*scurra Atticus*—*iustus rogator*—*magnus annus*—*appetitus animi*—*dictamnus*—*iniectus animi*—*titillatio*—*monogrammos deos*—*eruditus pulvis*—*peremnia*—*Octavianum bellum.*

3. (*a*) What seems to be the connexion between the first book of the *De Natura Deorum* and the Herculanean treatise 'περὶ εὐσεβείας' attributed to Philodemus? (*b*) Briefly indicate the line taken by the Academic critic in Book I. (*c*) Give the leading Stoic arguments for the Providential Government of the Universe.

4. Show how the reaction against Cicero's oratory and prose style, which began in his lifetime, affected the literature of the Augustan period.

5. Trace the influence on the Augustan poetry of the Alexandrine School of Greek poetry.

6. Compare the general structure of the sentence in the prose of Cicero with that found in Livy.

7. Give some account of the measures taken by Augustus for the Romanization of Gaul and Spain.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER b for Senior Scholarships.

PAPER c for Honours.

Translate into Latin Prose:—

(A.) Rienzi was encouraged by the presence and applause of an innumerable crowd, who understood little and hoped much; and the procession slowly rolled forwards from the castle of St. Angelo to the Capitol. His triumph was disturbed by some secret emotions which he laboured to suppress; he ascended without opposition, and with seeming confidence, the citadel of the republic; harangued the people from the balcony, and received the most flattering confirmation of his acts and laws. The nobles, as if destitute of arms and counsels, beheld in silent consternation this strange revolution; and the moment had been prudently chosen when the most formidable, Stephen Colonna, was absent from the city. On the first rumour he returned to his palace, affected to despise this plebeian tumult, and declared to the messenger of Rienzi that at his leisure he would cast the madman from the windows of the Capitol. The great bell instantly rang an alarm, and so rapid was the tide, so urgent was the danger, that Colonna escaped with precipitation to the suburb of St. Laurence; from thence, after a a moment's refreshment, he continued the same speedy career till he reached in safety his castle of Palestrina, lamenting his own imprudence which had not trampled the spark of this mighty conflagration.—*Gibbon.*

[*Turn over.*

(B.) As much as the wildest savage is inferior to the polished citizen, who, under the protection of laws, enjoys every convenience which industry has invented; so much is this citizen himself inferior to the man of virtue, and the true philosopher, who governs his appetites, subdues his passions, and has learned, from reason, to set a just value on every pursuit and enjoyment. For is there an art and apprenticeship necessary for every other attainment? And is there no art of life, no rule, no precepts to direct us in this principal concern? Can no particular pleasure be attained without skill; and can the whole be regulated without reflection or intelligence, by the blind guidance of appetite and instinct? Surely then no mistakes are ever committed in this affair, but every man, however dissolute and negligent, proceeds in the pursuit of happiness with as unerring a motion as that which the celestial bodies observe when, conducted by the hand of the Almighty, they roll along the ethereal plains. But if mistakes be often, be inevitably committed, let us register these mistakes; let us consider their causes; let us inquire for their remedies.—*Hume.*

NIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

GREEK LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER a.

·anslate into idiomatic English, with short explanations of difficulties :—

(A.) Homer : Odyssey, II. 40–59.

Ὦ γέρον, οὐχ ἑκὰς οὗτος ἀνήρ, τάχα δ' εἴσεαι αὐτός,
ὃς λαὸν ἤγειρα· μάλιστα δέ μ' ἄλγος ἱκάνει.
οὔτε τιν' ἀγγελίην στρατοῦ ἔκλυον ἐρχομένοιο,
ἥν χ' ὑμῖν σάφα εἴπω, ὅτε πρότερός γε πυθοίμην,
οὔτε τι δήμιον ἄλλο πιφαύσκομαι οὐδ' ἀγορεύω,
ἀλλ' ἐμὸν αὐτοῦ χρεῖος, ὅ μοι κακὰ ἔμπεσεν οἴκῳ
δοιά· τὸ μὲν πατέρ' ἐσθλὸν ἀπώλεσα, ὅς ποτ' ἐν ὑμῖν
τοίσδεσσιν βασίλευε, πατὴρ δ' ὣς ἤπιος ἦεν·
νῦν δ' αὖ καὶ πολὺ μεῖζον, ὃ δὴ τάχα οἶκον ἅπαντα
πάγχυ διαρραίσει, βίοτον δ' ἀπὸ πάμπαν ὀλέσσει.
μητέρι μοι μνηστῆρες ἐπέχραον οὐκ ἐθελούσῃ,
τῶν ἀνδρῶν φίλοι υἷες, οἳ ἐνθάδε γ' εἰσὶν ἄριστοι,
οἳ πατρὸς μὲν ἐς οἶκον ἀπερρίγασι νέεσθαι
Ἰκαρίου, ὥς κ' αὐτὸς ἐεδνώσαιτο θύγατρα,
δοίη δ', ᾧ κ' ἐθέλοι καί οἱ κεχαρισμένος ἔλθοι·
οἱ δ' εἰς ἡμέτερον πωλεύμενοι ἤματα πάντα,
βοῦς ἱερεύοντες καὶ ὄις καὶ πίονας αἶγας
εἰλαπινάζουσιν πίνουσί τε αἴθοπα οἶνον
μαψιδίως· τὰ δὲ πολλὰ κατάνεται. οὐ γὰρ ἔπ' ἀνήρ,
οἷος Ὀδυσσεὺς ἔσκεν, ἀρὴν ἀπὸ οἴκου ἀμῦναι.

(B.) Aeschylus : Choephoroc, 662–677.

Στείχοντα δ' αὐτόφορτον οἰκείᾳ σαγῇ
εἰς Ἄργος, ὥσπερ δεῦρ' ἀπεζύγην πόδα,
ἀγνὼς πρὸς ἀγνῶτ' εἶπε συμβαλὼν ἀνήρ,
ἐξιστορήσας καὶ σαφηνίσας ὁδόν,
Στρόφιος ὁ Φωκεύς· πεύθομαι γὰρ ἐν λόγῳ·
ἐπείπερ ἄλλως, ὦ ξέν', εἰς Ἄργος κίεις,
πρὸς τοὺς τεκόντας πανδίκως μεμνημένος
τεθνεῶτ' Ὀρέστην εἰπέ, μηδαμῶς λάθῃ.
εἴτ' οὖν κομίζειν δόξα νικήσει φίλων,
εἴτ' οὖν μέτοικον, ἐς τὸ πᾶν ἀεὶ ξένον,
θάπτειν, ἐφετμὰς τάσδε πόρθμευσον πάλιν.
νῦν γὰρ λέβητος χαλκέου πλευρώματα
σποδὸν κέκευθεν ἀνδρὸς εὖ κεκλαυμένου.
τοσαῦτ' ἀκούσας εἶπον. εἰ δὲ τυγχάνω
τοῖς κυρίοισι καὶ προσήκουσιν λέγων
οὐκ οἶδα, τὸν τεκόντα δ' εἰκὸς εἰδέναι.

(C.) Plato : Leges, 805 d–806 e.

ΑΘ. Φέρε, μὴ μετεχουσῶν ἀνδράσι γυναικῶν κοινῇ τῆς ζωῆς πάσης, μῶν οὐκ ἀνάγκη γενέσθαι γέ τινα τάξιν ἑτέραν αὐταῖς;

ΚΛ. Ἀνάγκη μὲν οὖν.

ΑΘ. Τίνα οὖν ἔμπροσθεν τῶν νῦν ἀποδεδειγμένων θεῖμεν ἂν τῆς κοινωνίας ταύτης, ἣν νῦν αὐταῖς ἡμεῖς προστάττομεν; πότερον ἣν Θρᾷκες ταῖς γυναιξὶ χρῶνται καὶ πολλὰ ἕτερα γένη, γεωργεῖν καὶ βουκολεῖν καὶ ποιμαίνειν καὶ διακονεῖν μηδὲν διαφερόντως τῶν δούλων; ἢ καθάπερ ἡμεῖς ἅπαντές τε οἱ περὶ τὸν τόπον ἐκεῖνον; νῦν γάρ δὴ τό γε παρ' ἡμῖν ὧδέ ἐστι περὶ τούτων γιγνόμενον· εἴς τινα μίαν οἴκησιν ξυμφορήσαντες τὸ λεγόμενον πάντα χρήματα παρέδομεν ταῖς γυναιξὶ διαταμιεύειν τε καὶ κερκίδων ἄρχειν καὶ πάσης ταλασίας. ἢ τὸ τούτων δὴ διὰ μέσου φῶμεν, ὦ Μέγιλλε, τό Λακωνικόν; κόρας μέν γυμνασίων μετόχους οὔσας ἅμα καὶ μουσικῆς ζῆν

δεῖν, γυναῖκας δὲ ἀργοὺς μὲν ταλασίας, ἀσκητικὸν δέ τινα βίον καὶ οὐδαμῶς φαῦλον οὐδ' εὐτελῆ διαπλέκειν, θεραπείας δὲ καὶ ταμιείας αὖ και παιδοτροφίας εἰς τι μέσον ἀφικνεῖσθαι· τῶν δὲ εἰς τὸν πόλεμον μὴ κοινωνούσας, ὥστ' οὐδ' εἴ τίς ποτε διαμάχεσθαι περὶ πόλεώς τε καὶ παίδων ἀναγκαία τύχη γίγνοιτο, οὔτ' ἂν τόξων ὥς τινες 'Αμαζόνες οὔτ' ἄλλης κοινωνῆσαί ποτε βολῆς μετὰ τέχνης δυνάμεναι, οὐδὲ ἀσπίδα καὶ δόρυ λαβοῦσαι μιμήσασθαι τὴν θεόν, ὡς πορθουμένης αὐταῖς τῆς πατρίδος γενναίως ἀντιστάσας φόβον γε, εἰ μηδὲν μεῖζον, πολεμίοισι δύνασθαι παρασχεῖν ἐν τάξει τινὶ κατοφθείσας;

(D.) THUCYDIDES: VI. 40.

'Αλλ' ἤτοι μαθόντες γε ἢ μεταγνόντες τὸ τῆς πόλεως ξύμπασι κοινὸν αὔξετε, ἡγησάμενοι τοῦτο μὲν ἂν καὶ ἴσον καὶ πλέον οἱ ἀγαθοὶ ὑμῶν ἤπερ τὸ τῆς πόλεως πλῆθος μετασχεῖν, εἰ δ' ἄλλα βουλήσεσθε, καὶ τοῦ παντὸς κινδυνεῦσαι στερηθῆναι καὶ τῶν τοιῶνδε ἀγγελιῶν ὡς πρὸς αἰσθομένους καὶ μὴ ἐπιτρέψοντας ἀπαλλάγητε. ἡ γὰρ πόλις ἥδε, καὶ εἰ ἔρχονται 'Αθηναῖοι, ἀμυνεῖται αὐτοὺς ἀξίως αὑτῆς, καὶ στρατηγοί εἰσιν ἡμῖν οἳ σκέψονται αὐτά. καὶ εἰ μή τι αὐτῶν ἀληθές ἐστιν, ὥσπερ οὐκ οἴομαι, οὐ πρὸς τὰς ὑμετέρας ἀγγελίας καταπλαγεῖσα καὶ ἑλομένη ὑμᾶς ἄρχοντας αὐθαίρετον δουλείαν ἐπιβαλεῖται, αὐτὴ δ' ἐφ' αὑτῆς σκοποῦσα τούς τε λόγους ἀφ' ὑμῶν ὡς ἔργα δυναμένους κρινεῖ καὶ τὴν ὑπάρχουσαν ἐλευθερίαν οὐχὶ ἐκ τοῦ ἀκούειν ἀφαιρεθήσεται, ἐκ δὲ τοῦ ἔργῳ φυλασσομένη μὴ ἐπιτρέπειν πειράσεται σῴζειν.

1. Show by examples that the syntax of the Greek cases exhibits "syncretism," *i. e.* that one case has sometimes taken upon it the functions of others.

2. What are the chief differences between the earlier and the later plays of Aristophanes? Of what nature were the later developments of Greek comedy?

3. Give a brief account of *one* of the following persons, viz. *Epameinondas, Demetrius Poliorcetes, Timoleon, Aratus*.

4. What were the principal causes, and what the chief stages, of the conquest of Greece by Macedon?

5. State shortly what is known of the constitution of the Achaean League.

6. Account for the change of Roman policy towards Greece between the consulship of Flamininus and the subjugation of Achaia.

UNIVERSITY OF NEW ZEALAND

B.A. EXAMINATION FOR HONOURS, 1893.

GREEK LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER b.

I. *Translate, with brief elucidatory notes on difficulties in language or allusion:—*

(A.) Sophocles: Oedipus Rex, 1260–1274.

Δεινὸν δ᾽ ἀύσας ὡς ὑφηγητοῦ τινος
πύλαις διπλαῖς ἐνήλατ᾽, ἐκ δὲ πυθμένων
ἔκλινε κοῖλα κλῇθρα κἀμπίπτει στέγῃ.
οὗ δὴ κρεμαστὴν τὴν γυναῖκ᾽ ἐσείδομεν,
πλεκταῖς ἑώραις ἐμπεπλεγμένην. ὃ δὲ
ὅπως ὁρᾷ νιν, δεινὰ βρυχηθεὶς τάλας
χαλᾷ κρεμαστὴν ἀρτάνην. ἐπεὶ δὲ γῇ
ἔκειτο τλήμων, δεινὰ δ᾽ ἦν τἀνθένδ᾽ ὁρᾶν.
ἀποσπάσας γὰρ εἱμάτων χρυσηλάτους
περόνας ἀπ᾽ αὐτῆς, αἷσιν ἐξεστέλλετο,
ἄρας ἔπαισεν ἄρθρα τῶν αὑτοῦ κύκλων,
αὐδῶν τοιαῦθ᾽, ὁθούνεκ᾽ οὐκ ὄψοιντό νιν
οὔθ᾽ οἷ᾽ ἔπασχεν οὔθ᾽ ὁποῖ᾽ ἔδρα κακά,
ἀλλ᾽ ἐν σκότῳ τὸ λοιπὸν οὓς μὲν οὐκ ἔδει
ὀψοίαθ᾽, οὓς δ᾽ ἔχρῃζεν οὐ γνωσοίατο.

(B.) Sophocles : Oedipus Coloneus, 560–568.

Δίδασκε· δεινὴν γάρ τιν᾽ ἂν πρᾶξιν τύχοις
λέξας ὁποίας ἐξαφισταίμην ἐγώ,
ὃς οἶδα καὐτὸς ὡς ἐπαιδεύθην ξένος,
ὥσπερ σύ, χὤς τις πλεῖστ᾽ ἀνὴρ ἐπὶ ξένης
ἤθλησα κινδυνεύματ᾽ ἐν τὠμῷ κάρᾳ·
ὥστε ξένον γ᾽ ἂν οὐδέν᾽ ὄνθ᾽, ὥσπερ σὺ νῦν,
ὑπεκτραποίμην μὴ οὐ συνεκσῴζειν· ἐπεὶ
ἔξοιδ᾽ ἀνὴρ ὢν χὤτι τῆς εἰς αὔριον
οὐδὲν πλέον μοι σοῦ μέτεστιν ἡμέρας.

(C.) Sophocles : Antigone, 966–987.

Παρὰ δὲ κυανέων σπιλάδων διδύμας ἁλὸς
ἀκταὶ βοσπόριαι ἰδ᾽ ὁ Θρῃκῶν ἄξενος
Σαλμυδησός, ἵν᾽ ἀγχίπτολις Ἄρης
δισσοῖσι Φινείδαις
εἶδεν ἀρατὸν ἕλκος
ἀραχθὲν ἐξ ἀγρίας δάμαρτος
ἀλαὸν ἀλαστόροισιν ὀμμάτων κύκλοις
ἄτερθ᾽ ἐγχέων, ὑφ᾽ αἱματηραῖς
χείρεσσι καὶ κερκίδων ἀκμαῖσιν.
κατὰ δὲ τακόμενοι μέλεοι μελέαν πάθαν
κλαῖον, ματρὸς ἔχοντες ἀνύμφευτον γονάν·
ἃ δὲ σπέρμα μὲν ἀρχαιογόνων
ἄντασ᾽ Ἐρεχθειδᾶν,
τηλεπόροις δ᾽ ἐν ἄντροις
τράφη θυέλλαισιν ἐν πατρῴαις
βορεὰς ἅμιππος ὀρθόποδος ὑπὲρ πάγου
θεῶν παῖς· ἀλλά κἀπ᾽ ἐκείνᾳ
Μοῖραι μακραίωνες ἔσχον, ὦ παῖ.

II. *Translate, with short elucidations* :—

(A.) Demosthenes : Philippic I. §§ 26, 27.

Τί οὖν οὗτοι ποιοῦσιν; πλὴν ἑνὸς ἀνδρὸς, ὃν ἂν πέμψητ᾽ ἐπὶ τὸν πόλεμον, οἱ λοιποὶ τὰς πομπὰς πέμπουσιν ὑμῖν μετὰ τῶν ἱεροποιῶν· ὥσπερ γὰρ οἱ πλάττοντες τοὺς πηλίνους, εἰς τὴν ἀγορὰν χειροτονεῖτε τοὺς ταξιάρχους καὶ τοὺς φυλάρχους, οὐκ ἐπὶ τὸν πόλεμον. οὐ γὰρ ἐχρῆν, ὦ ἄνδρες Ἀθηναῖοι, ταξιάρχους παρ' ὑμῶν, ἵππαρχον παρ' ὑμῶν, ἄρχοντας οἰκείους εἶναι, ἵν' ἦν ὡς ἀληθῶς τῆς πόλεως ἡ δύναμις; ἀλλ' εἰς μὲν Λῆμνον τὸν παρ' ὑμῶν ἵππαρχον δεῖ πλεῖν, τῶν δ' ὑπὲρ τῶν τῆς πόλεως κτημάτων ἀγωνιζομένων Μενέλαον ἱππαρχεῖν;

(B.) **Demosthenes**: De Corona, § 13.

Οὐ γὰρ ἀφαιρεῖσθαι δεῖ τὸ προσελθεῖν τῷ δήμῳ καὶ λόγου τυχεῖν, οὐδ' ἐν ἐπηρείας τάξει καὶ φθόνου τοῦτο ποιεῖν· οὔτε μὰ τοὺς θεοὺς ὀρθῶς ἔχον οὔτε δίκαιόν ἐστιν, ὦ ἄνδρες Ἀθηναῖοι· ἀλλ' ἐφ' οἷς ἀδικοῦντά με ἑώρα τὴν πόλιν, οὖσί γε τηλικούτοις ἡλίκα νῦν ἐτραγῴδει καὶ διεξῄει, ταῖς ἐκ τῶν νόμων τιμωρίαις παρ' αὐτὰ τἀδικήματα χρῆσθαι, εἰ μὲν εἰσαγγελίας ἄξια πράττοντα ἑώρα, εἰσαγγέλλοντα καὶ τοῦτον τὸν τρόπον εἰς κρίσιν καθιστάντα παρ' ὑμῖν, εἰ δὲ γράφοντα παράνομα, παρανόμων γραφόμενον· οὐ γὰρ δήπου Κτησιφῶντα μὲν δύναται διώκειν δι' ἐμέ, ἐμὲ δ', εἴπερ ἐξελέγξειν ἐνόμιζεν, αὐτὸν οὐκ ἂν ἐγράψατο.

(C.) **Demosthenes**: De Corona, §§ 121, 122.

Τί οὖν, ὦ ταλαίπωρε, συκοφαντεῖς; τί λόγους πλάττεις; τί σαυτὸν οὐκ ἐλλεβορίζεις ἐπὶ τούτοις; ἀλλ' οὐδ' αἰσχύνει φθόνου δίκην εἰσάγων, οὐκ ἀδικήματος οὐδενὸς, καὶ νόμους τοὺς μὲν μεταποιῶν, τῶν δ' ἀφαιρῶν μέρη, οὓς ὅλους δίκαιον ἦν ἀναγιγνώσκεσθαι τοῖς γε ὀμωμοκόσι κατὰ τοὺς νόμους ψηφιεῖσθαι; ἔπειτα τοιαῦτα ποιῶν λέγεις ἃ δεῖ προσεῖναι τῷ δημοτικῷ, ὥσπερ ἀνδριάντα ἐκδεδωκὼς κατὰ συγγραφήν, εἶτ' οὐκ ἔχοντα ἃ προσῆκεν ἐκ τῆς συγγραφῆς κομιζόμενος, ἢ λόγῳ τοὺς δημοτικοὺς, ἀλλ' οὐ τοῖς πράγμασι καὶ τοῖς πολιτεύμασι γιγνωσκομένους, καὶ βοᾷς ῥητὰ καὶ ἄρρητα ὀνομάζων, ὥσπερ 'ξ ἁμάξης, ἃ σοὶ καὶ τῷ σῷ γένει πρόσεστιν, οὐκ ἐμοί.

1. In what school of oratory did Demosthenes study, and in what way did his style differ from that of his most eminent predecessors? Explain and illustrate the word δεινότης as applied to Demosthenes.

(B.) We say the king can do no wrong; and it is well for poor George the Third that he cannot. In my opinion, however, he has lately been within a hair's breadth of that predicament. His advisers indeed are guilty, and not he; but he will probably find, however hard it may seem, that if he can do no wrong, he may yet suffer the consequences of the wrong he cannot do. He has dismissed his servants, but not disgraced them; they triumph in their degradation, and no man is willing to supply their places. Must their offices remain unoccupied, or must they be courted to resume them? Never was such a distracted state of things within my remembrance; and I much fear that this is the beginning of sorrows. It is not a time of day for a king to take liberties with the people; there is a spirit in the Commons that will not endure it; and his Majesty's advisers must be less acquainted with the temper of the times than it is possible to suppose them, if they imagine that such strides of prerogative will not be resented.—*W. Cowper.*

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER a.

N.B. *Ten Questions only to be attempted, in which Nos.* 2 *and* 4 *must be included. Of the remainder, not less than* 2 *nor more than* 4 *must be taken from Questions* 11 *to* 16 *inclusive.*

1. Describe fully the sources and the material from which we have to derive our knowledge of the language current in England by the inhabitants before the Norman Conquest. What name would you give to it, and why?

2. Translate the following passages, adding philological notes:—

1. Mid þam ðe se apostol Johannes stop into ðære byrig Ephesum, þa bær man him togeanes anre wydewan lic to byrigenne; hire nama wæs Drusiana. Heo wæs swiðe gelyfed and almesgeorn, and þa ðearfan, ðe heo mid cystigum mode eallunga afedde, dreorige mid wope ðam lice folgodon.

2. Da þæt gafol gelæst wæs, and friðaþas asworene wæron, þa toferde se here wide swa he ær gegaderod wæs. Da bugon to þam cynge of ðam here fif and feowertig scypa and him beheton þæt hi woldon þysne eard healdan, and he hi fedan sceolde and scrydan.

> 3. And he gon forth thennes a litil, say James of Zebede and Joon, his brother, and hem in the boot makinge nettis. And anoon he clepide hem; and Zebede her fadir, left in the boot with hirid seruauntis, thei sueden hym. And thei wenten forth into Cafarnaum, and anoon in the sabotis he, gon yn into the synagoge tauȝte hem. And thei wondreden on his techynge; sothely he was techynge hem as hauinge power and not as scribis.

What are the approximate dates of composition of the above extracts? Contrast the dialects in which they are written. Show how No. 3 approximates to the grammar of modern English.

3. Indicate, by examples, the differences observable between the Early West Saxon of Alfred's day and the later language of the 11th century. What important inference may we draw from them?

4. Explain what is meant by vowel-mutation (Umlaut) and vowel-gradation (Ablaut), and point out the influence of these principles on the English language.

5. State fully the great phonetic changes which have taken place in English between the 8th and the 19th centuries; and state generally the broad facts to which the enquiry leads us.

6. Discuss the meaning of the italicised portions of the following words:—*Un*truth. Soun*d*. *Mis*deed. *For*swear. *Fore*fend. *Fore*go. *For*give. Pea*se*. Man*ly*. For*me*r. Bishop*rick*. Ea*ch*. Worm*wood*. Fas*h*ion. Fro*m*.

7. Give the etymologies or probable etymologies of the following English words:—*Yellow*. *Blame*. *Clerk*. *Clever*. *Gossip*. *Savage*. *Cannon*. *Chemist*. *Idiot*. *Husband*. *Spite*. *Saunter*. *Tribulation*. *Salary*. *Wales*. *Pickaxe*. *Measles*. *Bird*. *Schooner*. *Wig*. *Rigmarole*. *Sobriquet*.

8. Trace the history, and discuss at each stage, the forms, meanings, and uses of the Infinitive Mood from the twelfth century to the present time.

9. "We may lay it down as a rule that all *formal* elements of a language were originally *substantial*." Illustrate this as fully as you can from the flexional forms and suffixes &c. of the English Language.

10. Give the roots of the verb which in English expresses *Being*. Write out its conjugation in the Southern Dialect, and add philological notes to illustrate the various forms introduced.

11. Into what periods may English Literature be divided? State what you know of the following :—*Beowulf. The Exeter Book. Havelok the Dane. Layamon's Brut. The Ormulum. The Prick of Conscience. Confessio Amantis. The King's Quhair. Tambulane. The Annus Mirabilis. Religio Laici. The Wisdom of the Ancients. Microcosmographia. The Divine Legation. The Compleat Angler. The Shepherd's Calendar. The Friend. The Shipwreck. Tarwater. Polyolbion. The Golden Grove. Roderick Random. The Saints' Everlasting Rest.*

12. What is known of the authorship and the manuscripts of the Vision concerning Piers the Plowman and of Piers Plowman's Crede? Give an account of the purport of the Poems and of the metre in which they are written.

13. Enumerate the personages in the *Canterbury Tales.* Discuss the genuineness of "The Tale of Gamelyn," "The Flower and the Leaf," and "The Court of Love." Whence did Chaucer derive the "Man of Lawes Tale"? Briefly sketch its contents. With what justice has Chaucer been called the "earliest dramatic genius of modern Europe" ?

14. Tabulate English Literature between Chaucer and Spenser, adding such notes and illustrations as may best give some idea of the mental activity of the time.

15. Write an introduction to *one* of the following plays of Shakespeare :—*Othello. As you like it. Romeo and Juliet. Merchant of Venice.* In what plays do we find the following characters ?—*Sir James Tyrrell. Charmian. Tony Lumpkin. Touchstone. Grumio. Bessus. Florizel. Edmund of Langley. Quince. Volumnia. Jaques. Dogberry. Sir Toby Belch. Sly. Edgar. Autolycus. Osrick.*

16. Sketch the rise and progress of the Historical Literature of this country. Contrast the standpoints occupied and the historical *method* employed by different writers.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER b.

1. Discuss fully, and with specific reference to his works, the place occupied by Pope in English Literature. Compare it with that occupied by Dryden. And with regard to both, what is your opinion of Mr. Matthew Arnold's startling paradox: "Dryden and Pope are not classics of our poetry, they are classics of our prose"?

2. Point out the *reactionary* character of English Literature in all its branches between 1688 and 1700. Give a brief account of the works, in verse and in prose, which come under his head.

3. The reign of Queen Anne has been called "illustrious" in respect of its literary achievements. Point out some of the aspects in which it exhibits a marked inferiority, "as not having treated with true appreciation one single subject which it has handled."

4. Give the authors, dates, and subjects of the following works. Give a short account of any two of them:—*The Rosciad. The Progress of Learning. Religio Laici. Sir Courtly Nice. The Hypocrite. The Essay on the Human Understanding. The Night Thoughts. The Epistle to Curio. The Beggar's Opera.*

5. Select one or more of *Elia's Essays*, and analyse it in illustration of the Author's genius, method, and style.

6. In what form did Goldsmith's *Citizen of the World* first appear, and by what name was it first known? How was the *Vicar of Wakefield* received on its first appearance? To what do you attribute the fascination it has exercised on all classes, and what do you consider to be the purpose and moral of the story?

7. At what period of Shakespeare's work were the Plays before us written? Characterize their style and workmanship as compared with that of any earlier and that of any later play. Compare also the five plays themselves (*a*) as regards the sustained interest of the plot as a whole; (*b*) the striking character of particular incidents; (*c*) the beauty of language in particular passages.

8. "King John departs further from the facts of History than any other of Shakespeare's Historical Plays." Give illustrations of the truth of this statement. Explain the meaning of the following lines:—

(*a*) He is but a bastard to the time
That doth not smack of observation.

(*b*) Do like the mutines of Jerusalem.

(*c*) What earthy name to interrogatories
Can task the free breath of a sacred king?

(*d*) Death having preyed upon the outward parts
Leaves them invisible, and his siege is now
Against the mind.

9. Discuss carefully the date of the composition of *Richard the Second*. Did it appear at first in its complete state, and if not, why not? Do you consider Coleridge was justified in calling it "the most admirable of Shakespeare's purely historical plays"? Describe the entry of Richard and Bolingbroke into London, and quote Dryden's remark on it. Explain any difficulties in the following passages that appear to invite comment and write a paraphrase of the last (*e*):—

(*a*) Imp out our drooping country's broken wing.

(*b*) I task the earth to the like, forsworn Aumerle;
And spur thee on with full as many lies
As may be holloa'd in thy treacherous ear
From sun to sun.

(*c*) Landlord of England art thou now, not king,
Thy state of law is bondslave to the law.

(*d*) By his attorneys-general to sue
His livery.

(*e*) I wasted time, and now doth time waste me;
For now hath time made me his numbering clock;
My thoughts are minutes; and with sighs they jar
Their watches on unto mine eyes, the outward watch,
Whereto my finger, like a dial's point,
Is pointing still, in cleansing them from tears.

10. Discuss the sources from which Shakespeare derived the materials for the last three plays before us, viz.: *Henry IV., Parts I. & II., Henry Fifth,* and *Richard III.* At what date were they composed, and in what form have they come down to us? Briefly describe the characters of Northumberland, Scroop, Poins, Shallow. With whom is the latter identified? What possessions had the English in France at the accession of Henry V.?

Annotate the following passages:—

(*a*) Shall we buy treason and indent with fears
When they have lost and forfeited themselves.

(*b*) I am joined with no foot land-rakers, no longstaff sixpenny strikers, none of these mad mustachio purple-hued maltworms . . . but with burgomasters and great oneyers.

(*c*) We steal as in a castle, cocksure; we have the receipt of fern-seed—we walk invisible.

(*d*) A rascally yea-forsooth knave! to bear a gentleman in hand and then stand upon security.

(*e*) England shall double gild his treble guilt.

(*f*) He's in Arthur's bosom, if ever man went to Arthur's bosom. A' made a finer end, and went away, an it had been any chrisom child.

(*g*) Who told me in the field by Tewkesbury
When Oxford had me down he rescued me
And said, Dear brother live, and be a King!

(*h*) And from the cross-row plucks the letter G.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER c.

Write an Essay on the Character of Richard the Third as delineated by Shakespeare.

UNIVERSITY OF NEW ZEALAND.

HONOURS IN ARTS EXAMINATION, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER a.

Translation, Composition, and Grammar.

A. *Translate into English* :—

Dans le port même, c'est une activité, une agitation, un encombrement, un fourmillement indescriptibles, causés par le chargement et le déchargement incessants des bâtiments de toutes sortes, trois-mâts, bricks, venus de tous les points du globe, hollandais, allemands, anglais espagnols, américains, australiens, amarrés en file ininterrompue et indéfinie, sur plusieurs rangs, le long des quais des bassins. Des bandes de robustes porte-faix, coiffés de capuchons en toile goudronnée tombant jusque sur les épaules, vont et viennent un par un de chaque navire au quai, ployés sous des mannes pleines ou sous des sacs pesants. De place en place, des grues tournantes enlèvent au bout de leur chaîne et déposent à terre d'énormes ballots suspendus. Ici s'entassent des peaux séchées et raidies; là des cornes de buffles s'amassent en monticule, s'éboulant en avalanche sonore à chaque nouvelle hottée qu'on y verse; plus loin, les tonneaux s'alignent, les barils s'étagent en pyramides; les billes d'acajou, les planches de bois du nord s'empilent. A travers ces monceaux de denrées diverses, qui débordent sur la

voie et l'obstruent, circulent avec peine les camions, les haquets, qui promptement se chargent, et, cahotés sur le pavé, s'en vont vers les grandes portes ouvertes des entrepôts.—*Eugène Lesbazeilles.*

B. Composition.

Translate into French :—

I fear I shall lose all my credit with you as a gardener by this specimen which I venture to send you of the produce of my walls. The snails, indeed, have had more than their share of my peaches and nectarines this season: but will you not smile when I tell you that I deem it a sort of cruelty to suffer them to be destroyed? I should scarce dare to acknowledge this weakness (as the generality of the world, no doubt, would call it) had I not experienced, by many agreeable instances, that I may safely lay open to you every sentiment of my heart. To confess the truth, then, I have some scruples with respect to the liberty we assume in the unlimited destruction of these lower orders of existence. I know not upon what principle of reason and justice it is that mankind have founded their right over the lives of every creature that is placed in a subordinate rank of being to themselves. Whatever claim they may have in right of food and self-defence, did they extend their privilege no further than those articles would reasonably carry them, numberless beings might enjoy their lives in peace that are now hurried out of them by the most wanton and unnecessary cruelties. I cannot indeed discover why it should be thought less inhuman to crush to death a harmless insect, whose sole offence is that it eats that food which nature has prepared for its sustenance, than it would be were I to kill any more bulky creature for the same reason. There are few tempers so hardened to the impressions of humanity as not to shudder at the thought of the latter; and yet the former is universally practised without the least check of compassion. This seems to arise from the gross error of supposing that every creature is really in itself contemptible which happens to be clothed with a body infinitely disproportionate to our own; not considering that great and little are merely relative terms.—***Melmoth.***

C. Grammar.

1. Translate: You, he, and I are very satisfied. Neither you nor I have believed it.—What is the rule with respect to the use of the pronouns in this case?

2. When a substantive stands as a complement to another, *de* is used when the idea of *origin, composition,* or *possession* is implied; *à* implies *means* or *purpose,* and is also used instead of *avec.* Exemplify this statement.

3. Give the present infinitive of *il paît, il oignit, il sied, échéant, féru.*

4. Translate: The hours she has slept have rested her—and explain the invariableness of the past participle in such phrases as the following:—Les grandes chaleurs qu'il a fait.

5. Translate: Up to the present time. Till it be done. Before they know it. Unless they come.

6. Translate:—

(*a*) However slender it may be, a hair casts a shadow.

(*b*) Whatever may happen, make your mind easy.

(*c*) To whomsoever you may address your discourse, let your language be, if not deferential, at least civil.

(*d*) Whatever his intention may be, he will follow your advice, whatever it may be.

(*e*) How well soever you may act, still you will meet with traducers for all that.

UNIVERSITY OF NEW ZEALAND.

HONOURS IN ARTS EXAMINATION, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER b.

Literature.

A. *Translate into English:—*

Mais veistes vous onques chien rencontrant quelque os medulare? C'est, comme dict Platon, la beste du monde plus philosophe. Si veu l'avez, vous avez peu noter de quelle devotion il le guette, de quel soing il le guarde, de quel ferveur il le tient, de quelle prudence il l'entomme, de quelle affection il le brise, et de quelle diligence il le sugce. Qui le induict à ce faire? Quel est l'espoir de son estude? Quel bien pretend il? Rien plus qu'un peu de mouelle. . . . . . A l'exemple d'icelluy vous convient estre saiges, pour fleurer, sentir et estimer ces beaulx livres de haulte gresse; legiers au prochaz et hardiz à la rencontre, puis, par curieuse leçon et meditation frequente, rompre l'os et sugcer la substantificque mouelle.

B. *Period appointed for Special Study.*

(Answers are to be given in English.)

1. Dites ce que vous savez du moraliste du seizième siècle qui "ne voulant pas dire: *Je ne sais,* dit: *Que sais-je?* dont il fait sa devise."

[*Turn over.*

2. La cause de Mayenne et de Philippe II. était perdue. Le dernier coup leur fut porté par la Satire Ménippée." Dites ce que vous savez de ce célèbre pamphlet.

3. Comment Henri Estienne a-t-il montré son amour de la langue maternelle ?

4. "On dict bien vray, la maulvaise Fortune
Ne vient jamais, qu'elle n'en apporte une,
Ou deux, ou trois avecques elle (Syre),
Vostre cueur noble en sçauroit bien que dire,
Et moy chetif, qui ne suis Roy, ne rien,
L'ay esprouvé. Et vous compteray bien,
Si vous voulez, comment vint la besongne."

Que savez-vous de l'auteur de ces vers ?

5. Quel est celui des ouvrages de Du Bellay que l'on dit être le manifeste de la Pléiade ?

6. Quels sont les principaux poètes tragiques de l'école de Ronsard ?

7. "Je me suis proposé de grands desseins dans ce petit ouvrage."
Justifiez cette assertion de l'auteur de 'Paul et Virginie.'

8. Que dit Montesquieu dans son chapitre "De la conduite que les Romains tinrent pour se soumettre tous les peuples" ?

UNIVERSITY OF NEW ZEALAND.

HONOURS IN ARTS EXAMINATION, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER c.

A. Faites en français une courte critique d'UN des trois ouvrages suivants :—

1. 'Considérations sur les causes de la grandeur des Romains et de leur décadence.'

ou

2. 'Le Joueur.'

ou

3. 'Paul et Virginie.'

B. (Answers to be given in English.)

Translate into English:—

Ço sent Rodlanz que la mort fort l'argudet.
Met sei sour piez, quant qu'il puet s'esvertudet;
En son visage sa color at perdude.
Tient Durendal s'espede tote nude:
Dedevant lui at une piedre brune,
Dis cols i fiert par duel e par rancune:
Croist li aciers, ne fraint ne ne s'esgrunet;
E dist li cons: "Sainte Marie, aiude!
E! Durendal, bone, si mare fustes!
Quant jo mei pert, de vos nen ai mais cure.
Tantes batailles en champ en ai vencudes,
E tantes terres larges escombatudes,

[*Turn over.*

Que Charles tient qui la barbe at chenude !
A mon vivant ne me serez tolude.
Ne vos ait om qui por altre s'en fuiet !
Molt bons vassals vos at lonc tens tenude :
Ja mais n'iert tels en France l'assolude."

1. Expliquez ces mots du passage ci-dessus :—Ço, argudet, s'esvertudet, duel, fraint, mare, tolude, iert.

2. Définissez ce qu'on appelait en ancien français une Chanson de geste.

3. Quelles sont les différences les plus considérables que présente la langue française du seizième siècle, comparée à la langue moderne, dans le vocabulaire, la prononciation et la grammaire ?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1893.

EUROPEAN HISTORY, 1789–1850.

Examiner: F. York Powell, M.A.

1. How far in your opinion was the English Government justified in going to war (1) in 1793 and (2) after the peace of Amiens?

2. Show how France was able to resist the allies, conquer Italy and the Low Countries, and crush domestic revolt, down to 1802.

3. By what steps was the independence of Greece secured? Explain the attitude of Canning, Byron, and Wellington to this movement.

4. "Of all those who have helped to build up German unity, Napoleon I. must take the first place." Show the effects, political, constitutional, and social, of Napoleon's action upon Germany.

5. "It was Spain and Russia that broke Napoleon's power." How far is this true?

6. Illustrate Napoleon's military methods by reference to one of his Austrian campaigns or to the French campaign of 1814.

7. "The Belgian revolt was necessary and inevitable, though its consequences have not been uniformly praiseworthy." Discuss this opinion and note the chief effects of the establishment of the Kingdom of Belgium.

[*Turn over.*

8. " Home rule for the Hungarians has been the result of 1848, and this policy was adopted and has been maintained for dynastic reasons and as a check to the Slavonic subjects of the Habsburg house." Explain this statement and sketch the history of Hungary under Francis Joseph.

9. "The revolution of 1848 appeared accidental, but it was really not so." Examine this dictum. What causes prepared for and produced the overthrow of Louis Philippe?

10. Give an account of the rise of the Socialist party. What were its immediate aims in 1848?

11. Describe (adding sketch-map if possible) the political position of Italy at the close of your period.

12. Why were the various movements in favour of Polish independence after 1800 unsuccessful? Note (adding sketch-map if possible) the geographic limits of the Polish nationality.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

POLITICAL ECONOMY.

Examiner: F. YORK POWELL, M.A.

1. Explain the theory of *Value.* Show the part taken by recent and living economists in arriving at the present opinions on the subject.

2. In what directions did Adam Smith and Ricardo advance economic science?

3. "If we were starting fresh, of course we should use both metals." Discuss this dictum on *Bimetallism.*

4. Explain the employment of *Credit* in modern commerce.

5. What is the *economic* importance of Education, (1) general and (2) technical?

6. Is Government control necessary to secure sound Banking? What control have (1) the British, (2) the New Zealand, (3) the United States Governments thought fit to use?

[*Turn over.*

7. Examine the chief arguments urged in favour of:—
   - (1) Cheap public railroads.
   - (2) Public tramways.
   - (3) Public subsidies to the Arts.
   - (4) Public subsidies to popular amusements.

8. "The joint-stock principle and its triumph marks a great economic advance and is one of the main economic phenomena of this century." In what directions has this principle been most successful?

9. What means have hitherto been found most efficient in lessening the antagonism between capital and labour under the present régime of Competition?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

JURISPRUDENCE.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. Give examples from Roman and Modern Law of the use of the distinction indicated by the phrases *in rem* and *in personam*.

2. Show from the history of law whether and how far "alienation" is an essential element of Property.

3. What reasons, not applicable in modern law, existed to justify the place assigned by Gaius to the *jus de personis*?

4. Specify the errors into which, according to Austin, Blackstone fell with respect to the nature and classification of law.

5. What is meant by *Successio in universum jus*? How far did universal succession even in Roman Law fall short of embracing the totality of rights? What examples exist in English Law? Account for the greater importance of the notion of universal succession in Roman Law.

[*Turn over.*

6. State briefly the view of Sir Henry Maine with respect to the position of the agnatic family in the history of law. Criticize his statements.

7. Define the notion of *possessio* as contrasted with ***dominium***. What effect is given to *possessio* so defined in different systems of law?

8. In what case is error or mistake a ground of exemption from liability? Distinguish in your answer between liability arising from contract and from tort, and between error of law and error of fact.

9. Account for the nature of the remedies given by Roman Law in the case of theft.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

CONSTITUTIONAL HISTORY.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. Explain the several ways in which the Veto of the Crown is exercised in respect of colonial legislature.

2. "Federal government means weak government." Examine this statement.

3. Give instances of actual or threatened conflict between the two Houses of Parliament in this century.

4. What were the contentions on the part of the Crown in the Shipmoney Case? Were they historically tenable?

5. Give examples of the violation of rules of evidence in the State trials during the Stuart Period.

6. State the points raised and arguments in the following cases:—

(1) Leach *v.* Money.
(2) Howard *v.* Gosset.
(3) Ashby *v.* White.

[*Turn over.*

7. State with exactness the process by which the application of the taxes to the objects to which they are appropriated is secured.

8. What is the relation of the Cabinet to the Crown and Parliament, and what are the internal relations of the members of the Cabinet one to another and to the Prime Minister?

9. "Our constitution, in short, is a judge-made constitution, and it bears on its face all the features, good or bad, of judge-made law." Illustrate and examine this proposition.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER a. GEOMETRY, &c.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. Prove that if two straight lines cut one another within a circle, the rectangle contained by the segments of one of them is equal to the rectangle contained by the segments of the other.

Three points, D, E, F, are taken on the sides BC, CA, AB of a triangle ABC, and circles are described on AD, BE, CF as diameters. If any chord drawn through the orthocentre P cut any circle in X and Y, prove that the product PX . PY is the same for all the circles.

2. Prove that triangles and parallelograms of the same altitude are to one another as their bases.

Three straight lines AP, BQ, CR are drawn through any point O to meet the sides BC, CA, AB of a triangle in P, Q, R. Prove that the three straight lines joining the middle points of these sides to the middle points of the lengths AP, BQ, CR, respectively, meet in a point.

3. If a straight line is at right angles to a plane, show that every plane passing through it is also at right angles to that plane.

Find by a geometrical construction the centres of the spheres which touch the four faces of a given tetrahedron.

4. Show that the normal to an ellipse bisects the angle between the focal distances.

An ellipse and a hyperbola have their foci at the corners A, B of a triangle and pass through the third corner C. Prove that these conics cut each other at right angles and that their semi-latera recta are respectively equal to the projections on AC or AB of the internal and external bisectors of the angle C. Find also geometrical constructions for the axes and eccentricity of each conic.

5. The tangent at any point P of a hyperbola intersects the asymptotes in T and U. Prove that T U is bisected in P.

If S be the focus and C the centre, prove that the angle T S U is equal to the sum of the angles S T C, S U C.

6. Investigate the equation referred to rectangular axes of the perpendicular drawn from any given point to a given straight line.

The coordinates of the corners of a triangle being given, find the equation to the perpendicular drawn from one corner on the opposite side.

7. Find the equation to the tangent at any point (x, y) of the circle $x^2+y^2=c^2$. Find also the equations to the tangents which intersect at right angles the straight line $y=mx+b$.

Sketch the lines

$$5x+6y-11=0;$$
$$x^2+y^2+3x+4y-9=0.$$

Determine if these intersect.

8. Two circles being given, investigate the locus of a point such that the lengths of the tangents drawn from it to the circles have a given ratio.

Show that the radical axis of the circumscribing and nine-points circle of a triangle ABC divides the side AB externally in the ratio AF : BF, where F is the foot of the perpendicular drawn from C on AB.

9. Investigate the equation to an ellipse referred to two conjugate diameters as axes.

Tangents TP, TQ are drawn to an ellipse whose foci are S, H, and P′CQ′ is the diameter parallel to the chord PQ. Prove that $\frac{\mathrm{TP}\,.\,\mathrm{TQ}}{\mathrm{TS}\,.\,\mathrm{TH}}=\frac{\mathrm{PQ}^2}{\mathrm{P'Q'}^2}.$

10. Show that the equation

$$(x+y)^2=x-5y+1$$

represents a parabola. Sketch the position of the curve and find the equations to the principal diameter and the tangent at the vertex.

11. Find the equation in trilinear or areal coordinates of the circle circumscribing the triangle of reference.

Find also the equations of the tangents parallel to the sides of the triangle.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER b. Algebra, Trigonometry, &c.

Examiner: E. J. Routh, Sc.D., F.R.S.

1. Show that the sum of the homogeneous products of x, y, z of n dimensions is equal to

$$\frac{x^{n+2}}{(x-y)(x-z)}+\frac{y^{n+2}}{(y-x)(y-z)}+\frac{z^{n+2}}{(z-x)(z-y)}.$$

If H_n is the sum of the homogeneous products of a, b, c, d, e of n dimensions, and K_n that of $b, c, d,$ prove

$$H_n-(a+e)H_{n-1}+aeH_{n-2} = K_n.$$

2. Assuming the expansion of $(1+x)^n$ in powers of x when n is a positive integer, prove its truth when n is a negative integer.

If $$(1+x)^n = a_0+a_1x+a_2x^2+ \ldots .$$

prove that

$$a_0 a_r+a_1 a_{r+1}+ \ldots . = \frac{\underline{|2n}}{\underline{|n+r} \,.\, \underline{|n-r}},$$

$$\frac{+1)a_0}{+1)}-\frac{(2p+3)a_1}{(p+1)(p+2)}+\frac{(2p+5)a_2}{(p+2)(p+3)}+\&c. = \frac{\underline{|n}\,\underline{|p-1}}{\underline{|n+p+1}}(n+2p+1).$$

3. If

$$n^r = A_0 n + A_1 n(n-1) + A_2 n(n-1)(n-2) + \&c.,$$

show how to find each of the successive coefficients A_0, A_1, &c., in terms of all the preceding. Thence find the sum of the rth powers of the first n integers.

Prove that

$$\Sigma \frac{a(a+x)\ldots(a+\overline{n-1}x)}{b(b+x)\ldots(b+\overline{n-1}x)} = \frac{a}{a+x-b}\left\{\frac{(a+x)\ldots(a+nx)}{b(b+x)\ldots(b+\overline{n-1}x)} - 1\right\}$$

where Σ implies summation from $n=1$ to $n=n$.

4. Investigate the expansion of e^x in powers of x. Find also the expansion of

$$\log\frac{1+(1+x)^3}{1+(1-x)^3},$$

and sum the series

$$2x - \frac{3}{2}x^2 + \frac{4}{3}x^3 - \&c.$$

5. An event has happened which must have arisen from some one of n different exclusive causes. The *à priori* probabilities of these causes and the probability of the event happening from each being known, find the probability that any one of these is the true cause.

A box is known to contain n balls which are either black or white. On trial a white ball is drawn; what is the probability that there were originally x white balls in the box?

6. Prove $\sin 18^\circ = \frac{1}{4}(\sqrt{5}-1)$, and find $\sin 81^\circ$.

Prove

$$\frac{\sin(B+C-A)}{\sin 2(B-A)\sin 2(C-A)} + \frac{\sin(C+A-B)}{\sin 2(C-B)\sin 2(A-B)} + \frac{\sin(A+B-C)}{\sin 2(A-C)\sin 2(B-C)} = 0,$$

and, if $A+B+C=\pi$,

$$\frac{\sin A + \sin B - \sin C}{\cot\frac{1}{2}C} = \frac{\sin A + \sin B + \sin C}{\cot\frac{1}{2}A + \cot\frac{1}{2}B + \cot\frac{1}{2}C}.$$

7. A triangle ABC being given, find the radii of the escribed circles. If r_1, r_2, r_3 be these radii, r, R those of the inscribed and circumscribing circles, prove that

$$2R-r = \frac{ar_1+br_2+cr_3}{a+b+c}.$$

Prove also that the three perpendiculars to the sides of the triangle at the points of contact with the escribed circles meet in a point.

8. Assuming

$$(\cos\theta+\sin\theta\sqrt{-1})^n = \cos n\theta+\sin n\theta\sqrt{-1}$$

to be true for positive integral values of n, prove its truth when n is any positive fraction.

Show how to find the n nth roots of unity. If $a_1, a_2, \ldots a_n$ be the n nth roots of ± 1, prove that

$$(a_1-p)(a_2-p)\ldots.(a_n-p) = \pm(p^n\pm 1).$$

9. Prove that

$$\tan^{-1}x = x-\frac{1}{3}x^3+\frac{1}{5}x^5-\ldots.$$

$$x\tan^{-1}x-\tfrac{1}{2}\log(1+x^2) = \frac{x}{1.2}-\frac{x^3}{3.4}+\ldots.$$

10. Find the equation to the tangent at any point of the curve $f(x, y)=0$.

Find the asymptotes and the tangent at the origin of the curve

$$2x-3y+(x-2y)(x+3y-1)(x-5y-1) = 0.$$

11. Show that the integral of any rational function of x can be found in finite terms. Find the integrals of

$$\frac{1}{1+x+x^2}, \quad \frac{1}{\sqrt{(1+x+x^2)}}, \quad \frac{1}{\sin x}.$$

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER c. Differential and Integral Calculus.

Examiner: E. J. Routh, Sc.D., F.R.S.

1. Investigate the limiting value of $\left(1+\frac{1}{x}\right)^{x}$ when x is infinitely great. Find also the value of $\left(1+\frac{1}{x^{n}}\right)^{x}$ and discuss the several cases which arise.

Differentiate and reduce to their simplest forms

$$\tan^{-1}\sqrt{\left(\frac{1+\cos x}{1-\cos x}\right)}, \qquad \cos^{-1}\sqrt{(\cos x)}.$$

2. Show that

$$\frac{d^{n}}{dx^{n}}\sin x = \sin\left(x+\frac{n\pi}{2}\right),$$

$$\left(\frac{d}{dx}\right)^{r}{}^{x}x^{n} = x^{n-r}\left(\frac{d}{dx}\right)^{n}e^{x}x^{r},$$

and when $n \sim r$ is an even integer

$$\left(\frac{d}{dx}\right)^{r}\cos x\,.\,x^{n} = \pm\,x^{n-r}\left(\frac{d}{dx}\right)^{n}\cos x\,.\,x^{r}.$$

3. Assuming that

$$\cos nx = A_0 + A_1 \cos x + \ldots + A_p (\cos x)^p + \ldots$$

where A_0, A_1, &c., are independent of x, prove by differentiating twice that

$$A_{p+2} = \frac{p^2 - n^2}{(p+1)(p+2)} A_p.$$

Find also the values of A_0 and A_1.

Show that

$$\Sigma \frac{\underline{|2p}}{\underline{|p} \cdot \underline{|p}} \frac{A_{2p}}{2^{2p}} = 0.$$

4. Explain how the method of indeterminate multipliers is used to find the values of x, y, z which make $\phi(x, y, z)$ a maximum or a minimum with the condition $f(x, y, z) = 0$.

The optical images P, Q, R of a point O are formed by the sides, or the sides produced, of a triangle ABC. Prove that the area of the triangle PQR is greatest when O is the centre of the circumscribing circle, and that P, Q, R then lie on a circle whose radius is equal to that of the circumscribing circle, and whose centre is the orthocentre. What is the area of PQR when O lies on the circumscribing circle?

5. If $u = \phi(y, z)$ where y and z are both functions of x, prove that

$$\frac{du}{dx} = \frac{d\phi}{dy}\frac{dy}{dx} + \frac{d\phi}{dz}\frac{dz}{dx}.$$

If u, v are two functions of x, y which satisfy

$$\frac{du}{dx} = \frac{dv}{dy}, \quad \frac{du}{dy} = -\frac{dv}{dx},$$

and if ξ, η are two other functions of x, y which (written for u, v) satisfy the same equations, prove that

$$\frac{du}{d\xi} = \frac{dv}{d\eta}, \quad \frac{du}{d\eta} = -\frac{dv}{d\xi}.$$

6. The polar equation to a curve being given in the form $r = f(\theta)$, investigate the polar equation to the tangent at any point.

Show also that the radius of curvature ρ is given by

$$\frac{1}{\rho} = \frac{1}{r}\frac{d}{dr}\left(r^2 \frac{d\theta}{ds}\right)$$

where ds is an element of arc.

7. The equation to a curve being given in the form

$$u_2 + u_3 + \&c. = 0,$$

where u_n is a homogeneous function of x, y of n dimensions, show that the tangents at the origin are given by $u_2 = 0$. Investigate also the values of $\frac{d^2y}{dx^2}$ for each branch, (1) when the factors of u_2 are different, and (2) when u_2 is a square.

Trace the curve

$$(x-y)^2+2(x^3-y^3)-x^3y^2=0$$

in the neighbourhood of the origin and find the radius of curvature of each branch.

8. Show that

$$\int \cos^{2m+1}\theta d\theta = \sin\theta - m\frac{\sin^3\theta}{3} + m\frac{m-1}{2}\frac{\sin^5\theta}{5} - \&c.,$$

$$-\int \sin^{2m+1}\theta d\theta = \cos\theta - m\frac{\cos^3\theta}{3} + m\frac{m-1}{2}\frac{\cos^5\theta}{5} - \&c.$$

Thence deduce the expansions of tan θ and log cot $\frac{1}{2}\theta$ in powers of sin θ and cos θ respectively.

Show also, if $b > a$,

$$\int_0^\pi \frac{\sin^2\theta \cos\theta d\theta}{(a^2-2ab\cos\theta+b^2)^2} = \frac{\pi a}{2b^3}\frac{1}{b^2-a^2}.$$

9. A space being enclosed by a curve $y=f(x)$, show that the area is $\pm\int y dx$ or $\pm\int x dy$, the integral being taken round the perimeter. Explain which sign is to be taken.

Find in any manner the area Δ of the ellipse $x^2 + xy + y^2 = a^2$, and show that

$$\iint(Ax^2 + 2Bxy + Cy^2)dxdy = \tfrac{1}{4}\Delta a^2(A-B+C),$$

the double integral being taken throughout the space enclosed by the ellipse.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER d. SOLID GEOMETRY AND DIFFERENTIAL EQUATIONS.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. The direction cosines of three given straight lines OA, OB, OC are (l, m, n), (l', m', n'), (l'', m'', n'') and OP, OQ, OR bisect the angles BOC, COA, AOB. Find the equation to the plane AOB. Show also that the direction cosines of OR are proportional to $l+l'$, $m+m'$, $n+n'$.

Prove that the three planes AOP, BOQ, COR intersect in a straight line whose direction cosines are proportional to $l+l'+l''$, $m+m'+m''$, $n+n'+n''$.

2. Find the equations to the spheres having their common centres at a given point and touching a given sphere.

Show that the locus of the centre of a variable sphere which touches two given spheres is two hyperboloids.

3. Find the equation to the tangent plane at any point of an ellipsoid referred to its principal diameters as axes. Find also the coordinates of the points of contact of the tangent planes which are parallel to any given plane.

Investigate the equation of the conicoid which touches the given ellipsoid along its intersection with a given plane and which passes through the centre.

4. Define the diametral line of a given plane. If OP, OQ, OR be a system of conjugate diameters and the coordinates of P, Q referred to the principal axes of the ellipsoid be given, find the coordinates of R.

Three lengths OG, OH, OK are drawn through the centre O perpendicular to the planes QOR, ROP, POQ proportional to the areas of those sections, prove that OG, OH, OK form a system of conjugate diameters in a reciprocal ellipsoid.

5. Show that the direction cosines of the normal to the surface $f(x, y, z)=0$ are Pf_x, Pf_y, Pf_z where $1/P=\sqrt{(f_x^2+f_y^2+f_z^2)}$, and that the radical is to be taken as positive when the normal is drawn towards that side of the surface on which $f(x, y, z)$ is positive.

A system of straight lines is given in the form

$$\frac{x-a}{\cos\alpha}=\frac{y-b}{\cos\beta}=\frac{z-c}{\cos\gamma},$$

where $a, b, c, \alpha, \beta, \gamma$ are functions of two parameters p, q. Show that if they are normals to a system of surfaces

$$\cos\alpha\, da+\cos\beta\, db+\cos\gamma\, dc$$

is a perfect differential of some function of p, q. Show also how to find the surfaces.

6. Show how to solve the differential equation

$$y=px+f(p),$$

and explain the relation which exists between the two solutions.

Solve also the equation

$$y^2-x^2=2pxy+f(x+py).$$

7. Show that the differential equations

$$P_2\frac{d^2y}{dx^2}+P_1\frac{dy}{dx}+P_0y=0;$$

$$\frac{d^2}{dx^2}(P_2z)-\frac{d}{dx}(P_1z)+P_0z=0$$

are so related that if either be multiplied by a solution of the other it becomes a perfect differential.

Under what circumstances is $x^m\dfrac{d^ny}{dx^n}$ a perfect differential ?

8. Show how to clear the equation

$$P_n\frac{d^ny}{dx^n}+P_{n-1}\frac{d^{n-1}y}{dx^{n-}}+\ \ldots\ldots\ +P_0y=0$$

(when P_n, &c., are given functions of x) of any proposed term. Thence, or otherwise, show that when r independent solutions are known, the differential equation can be reduced r degrees.

9. Solve the differential equations

$$x\frac{dy}{dx}=y(1-3xy),$$

$$\frac{d^2y}{dx^2}-7\frac{dy}{dx}+6y=e^x,$$

$$x^2\frac{d^2y}{dx^2}+3x\frac{dy}{dx}+y=x^n,$$

$$(x^2+y^2)\frac{d^2y}{dx^2}=2\left\{1+\left(\frac{dy}{dx}\right)^2\right\}\left\{x\frac{dy}{dx}-y\right\}.$$

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1898.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER e. MECHANICS.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. Any number of forces act on a body in one plane. Investigate the necessary and sufficient conditions of equilibrium.

Three arcs AB, BC, CA form a plane curvilinear triangle and each element is acted on by a normal force whose magnitude, referred to a unit length of arc, is measured by the curvature. Show that all these forces are statically equivalent to three forces which bisect the angles A, B, C, and are measured by twice the cosine of half each angle.

2. The form of a curve being given by its equation, show how to find the positions on it at which a particle would rest in equilibrium under the action of any given forces.

If five equal particles, attracting each other with forces which are proportional to the distance, can slide freely on the arc of a smooth fixed ellipse with unequal axes, prove that they cannot be in equilibrium unless two at least are close together. Show also that these two must be at the extremity of an axis unless the square of the eccentricity of the ellipse is $\frac{1}{5}(\sqrt{24}-2)$.

3. A thin heavy chain is suspended from two fixed points; ψ is the angle the tangent at any point P makes with the horizon, and C is the lowest point. Prove that if the chain is uniform tan ψ is proportional to the arc CP, but if the area of any section is proportional to the tension, ψ is proportional to the distance of P from the vertical through C.

4. Show how to find the centre of gravity of the area bounded by any curve and by two radii vectores drawn from the origin.

Show that the centre of gravity of either loop of the lemniscate $r^2=a^2 \cos 2\theta$ is at a distance $\pi a/4\sqrt{2}$ from the origin.

5. Show that the resolved pressure on a surface immersed in a homogeneous fluid in any horizontal direction Ox is equal to the pressure on the projection of the surface on a plane perpendicular to Ox.

A hemisphere floats in a fluid with the base above the surface of the fluid. Neglecting the pressure due to the atmosphere, find the couple which could hold the body with its base inclined at any angle to the horizon.

6. A heavy particle is projected from a given point P *in vacuo* with a given velocity in a given direction. Find the coordinates at any time t.

If P, Q be two points on the path and the tangents at P, Q meet in T, prove that a vertical through T divides the path PQ into two parts which are described in equal times.

Show that this is also true if the motion is in a medium whose resistance varies as the velocity.

7. A particle describes a circle of radius c about a centre of force situated at a point O on the circumference. Find the law of force and the angular momentum.

If when the particle is at the distance of a quadrant from O the central force, without altering its instantaneous magnitude, began to vary as the inverse square, show that the semi-axes of the new orbit are $\frac{2}{3}c\sqrt{2}$ and $\frac{1}{3}c\sqrt{3}$. Find also the position of the other focus.

8. A heavy particle moves on a smooth cycloid having the axis vertical and the cusps upwards. Find the time of oscillation and velocity at the lowest point when the arc is known.

If the cycloid is rough with a coefficient of friction μ, and if the particle, starting from rest at a cusp, come to rest at the lowest point, prove that $\mu\pi = -2 \log \mu$.

9. A particle moves on a smooth surface under the action of any forces; show that half the change in the *vis viva* is equal to the work done by the forces.

A heavy particle, constrained to move on the surface of an ellipsoid having one axis vertical, is projected horizontally from any point P with a velocity V. If the path lie in a horizontal plane, show that the ellipsoid must have two of its axes equal, and find V when the coordinates of P are known.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER f. OPTICS AND ASTRONOMY.

Examiner: E. J. ROUTH, Sc.D., F.R.S.

1. A small object Q moves along the axis of a spherical glass refractor and its image q is formed by the rays within the glass. Trace the changes in the position of q, stating whether the image is inverted or erect, and whether magnified or not.

An opaque sphere of radius a surrounded by a shell of glass is placed halfway between a small object A and an eye B, the distance AB being $2b$. Show that the least external radius x of the glass shell that A may be visible is given by

$$\sqrt{(x^2-a^2)}=b-\sqrt{(\frac{b^2}{\mu^2}-a^2)}.$$

2. A ray passes through a prism in a principal plane without internal reflexion and the deviation is a minimum. Show that the angles of incidence and emergence are equal.

If α, β, γ are the distances of a luminous point from the faces of a glass prism, taken with their proper signs, show that the distance from the face AC of the geometrical image formed by rays refracted inwards at BC, reflected at AB, and refracted outwards at AC is β''' where

$$\mu\beta'''=-(\mu-1)\alpha\cos(A-B)+\beta+2\gamma\cos A.$$

3. Two small objects P, Q are both situated on the common axis of any combination of lenses, thick or thin, and their

[*Turn over.*

geometrical images are p, q. If $PQ=u$, $pq=v$, prove that

$$\frac{m^2}{v}-\frac{1}{u}=\frac{m}{f},$$

where m is the magnification of the image p, and f is a constant for the same combination of lenses.

If m' is the magnification of q, show also that $mm'=\frac{v}{u}$.

4. What is meant by long sight and short sight? and explain how these defects may be remedied by the use of lenses.
If the density of the air were doubled, what kind of lens would enable a person to see as before?

5. Describe the compound refracting microscope with two lenses and sketch the course of an oblique pencil of rays through it, stating the positions of the images. Show also how the field of view may be increased by introducing a third lens.

6. Define the equator and ecliptic. Explain how Flamsteed determined the position of the first point of Aries, describing the practical advantages which he sought to gain by his method.

7. Assuming that the earth's orbit is an ellipse, describe how the longitude of the apse line may be determined, stating what observations should be made and what instruments used.

8. Define the mean sun and the equation of time. If the obliquity of the ecliptic were zero, show that the equation of time would vanish twice in the year and determine its sign at other times. Show also that its greatest value would be about seven minutes of time, and state at what time of the year this would happen.

9. The altitude and azimuth of the sun and the hour of the day being given, show how to find the latitude of the place and the longitude of the sun, stating the formulæ of spherical trigonometry which must be used.
At what o'clock and in what latitude does the sun rise due north-east on the longest day?

10. Show how to find the distance of a planet by observations made at two stations nearly on the same meridian, explaining how the errors due to refraction are obviated.
Make a list of the different methods which have been used to determine the distance of the sun.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

PHYSICAL SCIENCE.

ELECTRICITY AND MAGNETISM. I.

Examiner: Principal GARNETT, D.C.L.

1. Describe the best method you know for measuring electrically very high temperatures, such as those of metallurgical furnaces.

2. Determine the conditions under which an electric discharge, such as that of a Leyden jar, will be alternating.

3. How would you determine the constant of a tangent compass (galvanometer) by means of a calorimeter? What arrangement would you adopt in order to keep the current constant during the experiment?

4. Describe the process of electric welding by means of an alternating current transformer. Explain why it is possible to weld a tire although the continuous portion of the hoop offers much less resistance than the weld.

5. Describe some method of measuring the *efficiency* of an alternating current transformer. What are the chief sources of loss in such transformers when used under ordinary conditions for electric lighting purposes?

[*Turn over.*

6. Draw curves showing the relation between the electromotive force and the primary current in a transformer with a closed magnetic circuit (*a*) when the secondary circuit is open and (*b*) when there is full load on the secondary circuit.

In each case draw a third curve showing the energy which is being drawn at every instant from the source of power.

7. Explain fully how one "alternator" is able to drive another of the same type as a motor.

Describe the process of connecting two alternators "in parallel" on the same circuit. If the alternators give the same E. M. F. when running with the same periodicity, but are of widely different types of construction, what difficulty would you anticipate in attempting to obtain parallel running?

8. What is Verdet's constant? How would you arrange an experiment to determine Verdet's constant, using carbon disulphide and sodium light?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

PHYSICAL SCIENCE.

ELECTRICITY AND MAGNETISM. II.

Examiner : Principal GARNETT, D.C.L.

1. What is the effect of a slight increase of temperature on the magnetic moment of a steel bar magnet? How would you determine the temperature coefficient of the swinging magnet of a unifilar magnetometer?

2. Explain fully how you would proceed to compare the resistances of two coils of about 30 ohms each by a method which would indicate a difference of one part in a million.

3. When standard ohms are constructed the temperature at which they represent a true ohm has to be determined as well as their temperature coefficients. How are the determinations made?

4. It is not unusual to specify that an electric-light cable shall have an insulation resistance of 5000 megohms per mile after being immersed in water for 24 hours. How may this insulation resistance be measured?

5. How would you determine the constant of a ballistic galvanometer? Having determined it, explain fully how you would use the instrument for the measurement of an induction "current" the duration of which is very short compared with the time of swing of the needle.

What is the nature of the error produced if the last-mentioned condition is not fulfilled?

[*Turn over.*

6. What is meant by the self-induction of a coil? **Describe** fully how the self-induction of a coil can be compared with the mutual induction between two standard coils.

7. How would you proceed to test the magnetic qualities of a sample of iron which it is proposed to use for the field magnets of a dynamo?

Describe Ewing's apparatus (magnetic curve tracer) for showing the relation between the magnetizing force and the magnetic induction produced in an iron bar.

8. Describe some method of measuring the specific resistance of an electrolyte such as a solution of cupric sulphate.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

PHYSICAL SCIENCE.

PAPER b. ELECTRICITY AND MAGNETISM.

Examiner: Principal GARNETT, D.C.L.

1. State clearly what are the electrostatic units of *quantity*, *potential difference*, and *resistance*.

In defining the electrostatic units of quantity why is it necessary to introduce the condition that the electric repulsion should take place *through air*?

2. Explain in the simplest way you can, and if possible with the help of mechanical illustrations, why the capacity of a Leyden jar is increased by reducing the thickness of the glass. What is the effect on the capacity of raising the temperature of the jar?

3. What is the primary object of an electrometer? In the case of Lord Kelvin's (Sir W. Thomson's) absolute (attracted disk) electrometer, show how to determine in electrostatic measure the difference of potential between the plates of the instrument when the adjustment has been completed.

4. Show how to calculate the insulation resistance per metre run of a cable, the external diameter of which is D centimetres, the diameter of the conductor d centimetres, and the insulator homogeneous and of resistance R megohms per cubic centimetre.

5. What is a magnetic field of unit strength? Describe some method of measuring the magnetic induction in the air between the poles of an electro-magnet.

[*Turn over.*

6. Define magnetic permeability, and describe the manner in which the permeability of a sample of soft iron varies with the strength of the magnetizing force.

What is the difference between the behaviour of soft wrought iron and of cast iron as the magnetizing force is raised from zero up to several hundred C.G.S. units?

7. Point out the conditions which must be fulfilled by a tangent galvanometer in order that it may accurately measure, by the tangent of the angle of deflection, the current which passes through its coils.

8. Describe two or three forms of ampère-meter suitable for the switch-board of an ordinary electric-lighting installation and measuring currents up to 100 ampères. Criticise the instruments according to their merits.

9. How would you compare the electromotive forces of any number of batteries by means of a "potentiometer" or some equivalent appliance?

You are required to determine the relation between the (external) E.M.F. of a battery cell and the current it is transmitting when the latter has become steady, so as to learn the effect of polarization on the working of the battery. How would you proceed?

10. The E.M.F. in a closed circuit is represented by the rate of diminution of the number of lines of magnetic induction which pass through it in the positive direction. Explain fully the meaning of this statement and how you would verify it experimentally.

11. State clearly the effect of the iron core in an induction coil.

Would the action of a Ruhmkorff coil fitted with an independent interrupter for making and breaking the primary circuit be improved by "closing the magnetic circuit" outside the coil? Give reasons for your answer.

12. Explain why it is necessary in ordinary dynamos to give "lead" to the brushes and to increase the amount of lead with increased output of the machine. What determines the amount of "lead" necessary to prevent sparking? What would be the effect of reducing the magnetizing current and thereby the strength of the field magnets, but maintaining the armature current the same by reducing the external resistance?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

CHEMISTRY.

PAPER a.

Theoretical and Inorganic Chemistry.

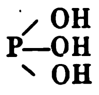
Examiner: Prof. T. E. Thorpe, Ph.D., B.Sc. (Vict.), D.Sc. (Dubl.), F.R.S.

1. Write a short account of the present state of opinion as to the validity of Prout's Law.

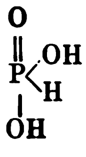
2. Playfair and Joule pointed out that the volumes of certain highly hydrated salts, *e. g.* Sodium Carbonate with 10 mols. of water, and the alkaline Arsenates and Phosphates with 12 mols., are exactly equal to that of the water, considered as ice, which they respectively contain. Describe the experiments you would make in order to test the validity of this statement.

3. Describe the general methods to be followed in ascertaining the atomic weight of a metal.

4. Phosphorous acid has been variously represented as



and



[*Turn over.*

Discuss the question of the validity of the two formulæ, indicating the significance of the following facts :—

(1) That in most of its salts phosphorous acid is tribasic.
(2) That an ether exists of the formula $PO_3(C_2H_5)_3$.
(3) That phosphorous acid may be formed by the action of water on phosphorous trichloride.
(4) That phosphenyl chloride is formed by the action of the trichloride on benzene, and that when this body is treated with water $PO_2H_2(C_6H_5)$ is produced, which by treatment with PCl_5 affords the following reaction :—

$$OPH(OH)C_6H_5 + 2PCl_5 = OPCl_2(C_6H_5) + POCl_3 + PCl_3 + 2HCl.$$

5. Give a short account of the peculiar properties of carbon which render possible the formation of so many compounds of this element.

6. Describe the process of gold assaying.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

CHEMISTRY.

PAPER b.

Physical Chemistry.

Examiner: Prof. T. E. Thorpe, Ph.D., B.Sc. (Vict.),
D.Sc. (Dubl.), F.R.S.

1. The absorption-coefficient of nitrogen dissolved in water is 0·0152 at 12°·6. What volume of the gas measured at standard temperature and pressure is absorbed by one litre of water at 12°·6 at each of the following pressures:—

1000 mm., 748·2 mm., 391 mm., and 14·3 mm.?

2. Describe in detail how you would determine with accuracy the boiling-point of a liquid.

Correct the observed boiling-point of a liquid from the following data:—

Corrected temperature $= T'$.
Observed " $= T = 50°·25$.
Length of cooled column $= N = 35°$.
Mean temp. of cooled col. $= t = 17°·5$.
$d = ·000143$.
$T' = T + N(T - t)d$.

The height of the barometer at the time of observation was 745 mm. (h).

Reduce the boiling-point to the standard pressure on the assumption that the formula $0·0375° \, (h - 760 \text{ mm.})$ is valid.

[*Turn over.*

3. Describe the methods by which the calorific value of a fuel may be determined.

4. How has it been proved that ammonium chloride is completely dissociated into ammonia and hydrogen chloride at 350° C.?

5. How does a knowledge of the lowering of the freezing-point of a liquid by the addition of a soluble substance to it serve to determine the molecular weight of that substance?

6. What is meant by the term osmotic pressure?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(A.) BOTANY.

PAPER a.

Examiner: Prof. I. BAYLEY BALFOUR, F.R.S.

1. Write a general account of the characters and distribution of the vascular-bundle system in plants, and point out how the views of astely, monostely, and polystely brought forward by French botanists are applicable in explanation of the facts.

2. Describe in detail the structure of *Agaricus*. Compare its life-history with that of any typical Ascomycete and show how the two may be homologized.

3. Describe the structure and development of a stoma and of a lenticel. How does each perform its function?

4. Compare the structure and development of the sporangium in Musci, Filices, and Lycopodineæ.

5. Write a morphological account of the natural order Gramineæ. How is the structure of the inflorescence and flower to be explained?

6. Enumerate the orders of dicotyledonous flowering plants belonging to the Apetalæ found in New Zealand. Point out the affinities of these orders with those of the Monopetalæ and Polypetalæ.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(A.) BOTANY.

PAPER b.

Examiner: Prof. I. BAYLEY BALFOUR, F.R.S.

1. What is the use of free oxygen to a plant? Whence and how does a plant obtain it? How do you explain the phenomena of life of anaerobic plants?

2. A pollen-grain is sown on the stigma. Describe in detail the way in which the pollen-tube reaches the embryo-sac, and also describe the changes that take place inside the pollen-tube and the process of impregnation of the ovum.

3. Write an account of the phenomena of nutation in plants.

4. Illustrate, by the description of specific examples, the correlation of growth between members of the same plant.

5. Describe a series of examples, drawn from the New-Zealand flora, illustrative of the positions occupied in the flower by honey-glands. Point out in each case how the position of the honey-gland is adapted to the requirements of the flower.

6. By the description of one example illustrate:—
   (1) The manner in which a parasite enters its host.
   (2) The effect produced by the parasite upon its host.
   (3) The characters impressed upon the parasite by its parasitism.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(A.) BOTANY.

PAPER c.

Examiner: Prof. I. BAYLEY BALFOUR, F.R.S.

1. Describe, in a series of examples drawn from the New-Zealand flora, the structural adaptations found in plants for the distribution of their fruits and seeds.

2. Mention some of the more important timber-trees of New Zealand, stating the natural order of each. What effect has forest-vegetation on climate? How do you explain this effect?

3. The gaps between existing forms of Pteridophyta are, to some extent, bridged over by fossil forms. Give an account of some of these fossil forms and show how they aid in the construction of a phylogeny of the group.

4. Write a brief account of the Germ-plasm theory of heredity and point out any evidences from the plant side that, in your opinion, support or are opposed to the theory.

5. Write an historical account of the development of our knowledge of sex and the performance of the sexual act in plants.

6. Arrange the groups of Algæ in a classification you consider natural, giving reasons for placing each group in the position you assign to it.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

NATURAL SCIENCE.

(B.) GEOLOGY, &c.

PAPER a.

Examiner: Prof. A. H. GREEN, M.A., F.R.S.

1. Give illustrations of the connexion between the optical properties of minerals and their crystallographic systems. What explanation can be given of the reason for this connexion and why the optical constants can be altered by pressure and change of temperature?

2. Give an account of a deposit which seems to be mainly composed of wind-borne dust, and state the reasons for believing that this is its origin.

3. Give illustrations of the way in which differences in environment produce variations in a species both in fossil and recent forms.

4. What is the general character of the metallic compounds most largely met with in the deeper parts of lodes? What difference is there between these and the ores nearer the surface, and how are these differences produced? Is there any exception to these general rules?

[*Turn over.*

5. Describe two ways in which Islands may be formed, and explain, by reference to actual cases, how you would decide in what way a given island has arisen, and whether it has been an island for a long or a short time.

6. Describe in technical terms the genera *Fenestella, Calymene, Productus,* and *Trigonia*; and give for each its range in time and place in zoological classification.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(B.) GEOLOGY, &c.

PAPER b.

Examiner: Prof. A. H. GREEN, M.A., F.R.S.

1. Explain what is meant by "Twinning" in crystals, and give instances of twinning in crystals which belong to the Cubic and to the Triclinic systems. Describe a case in which twinning has been produced artificially.

2. State the arguments in favour of the view that the atmosphere once contained a larger amount of Carbon Dioxide than at present, and mention any other explanation that can be given of the facts alleged in support of this view. Do you think that such a state of things existed during any part of the period covered by the geological record?

3. Describe a few of the more important igneous rocks in which Nepheline occurs, and give localities where they are met with. Give also a case where the same mineral is found in a non-igneous rock, and explain its origin there.

4. Define, and illustrate by sketches, the terms Anticline, Syncline, Overfold, and Thrust-plane; and trace a passage from Symmetrical Folds up to Thrust-planes. Describe the nature of the deformation which rocks suffer in different portions of an Overfold.

[*Turn over.*

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

NATURAL SCIENCE.

(B.) Geology, &c.

PAPER a.

Examiner: Prof. A. H. Green, M.A., F.R.S.

1. Give illustrations of the connexion between the optical properties of minerals and their crystallographic systems. What explanation can be given of the reason for this connexion and why the optical constants can be altered by pressure and change of temperature?

2. Give an account of a deposit which seems to be mainly composed of wind-borne dust, and state the reasons for believing that this is its origin.

3. Give illustrations of the way in which differences in environment produce variations in a species both in fossil and recent forms.

4. What is the general character of the metallic compounds most largely met with in the deeper parts of lodes? What difference is there between these and the ores nearer the surface, and how are these differences produced? Is there any exception to these general rules?

[*Turn over.*

5. Describe two ways in which Islands may be formed, and explain, by reference to actual cases, how you would decide in what way a given island has arisen, and whether it has been an island for a long or a short time.

6. Describe in technical terms the genera *Fenestella*, *Calymene*, *Productus*, and *Trigonia*; and give for each its range in time and place in zoological classification.

RSITY OF NEW ZEALAND.

Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(B.) GEOLOGY, &c.

PAPER b.

miner: Prof. A. H. GREEN, M.A., F.R.S.

what is meant by "Twinning" in crystals, and
s of twinning in crystals which belong to the Cubic
iclinic systems. Describe a case in which twinning
luced artificially.

he arguments in favour of the view that the
nce contained a larger amount of Carbon Dioxide
ent, and mention any other explanation that can
e facts alleged in support of this view. Do you
ch a state of things existed during any part of the
d by the geological record ?

e a few of the more important igneous rocks in
line occurs, and give localities where they are met
lso a case where the same mineral is found in a
ock, and explain its origin there.

and illustrate by sketches, the terms Anticline,
rfold, and Thrust-plane; and trace a passage from
Folds up to Thrust-planes. Describe the nature
ation which rocks suffer in different portions of an

[*Turn over.*

5. Give a description of a sea-coast deeply indented with long narrow fiords, and of a coast where broad bays alternate with prominent headlands, and explain why in each case these features are present.

6. A country consists of alternations of harder and softer rocks all dipping the same way at a moderate angle. Draw a contoured map showing the main physical features of the district and explain how they were produced.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

NATURAL SCIENCE.

(B.) GEOLOGY, &c.

PAPER c.

Examiner: Prof. A. H. GREEN, M.A., F.R.S.

1. Describe the effects of Contact Metamorphism, and some of the minerals commonly produced by its action when the rock affected by it is (1) a Limestone, (2) a Clayey rock.

2. Define Joints. Describe two forms of jointed structure which occur in rocks, and explain a way in which each may have been produced. In what respect are Joints economically important?

3. Give an account of some of the principal lakes of New Zealand, and state how you think they were formed, giving reasons for your opinion.

4. Describe the distinctive characters of *Ceratodus* and the *Labyrinthodonts*, and state the range in time of each.

5. Give an account of the geology of a district in which volcanic activity was rife during (1) Mesozoic and (2) Tertiary times; and state in each case the evidence for the fact.

6. Give an account of those parts of Lepidodendron which aid us in determining its relationship to existing forms, and state the more important points in which it differs from its recent allies.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIP, 1893.

NATURAL SCIENCE.—(B) ZOOLOGY.

Examiner: Prof. G. B. Howes, F.L.S., F.Z.S.

PAPER a.

You are only permitted to answer four questions.

1. Give an account of the structure of any horny sponge, and discuss the position of the "Keratosa" in the poriferine series.

2. Describe the development of the Echinodermata, with especial reference to the detailed mode of substitution of the radially for the bilaterally symmetrical condition.

Or

Give a general account of the structure and development of any Crinoid, laying stress upon those points which are exceptional for the Class Echinodermata.

3. State your practical knowledge of the anatomy of any Brachiopod, and show upon what grounds attempts have been made to associate the Brachiopoda with Worms and Polyzoa.

[*Turn over.*

4. Describe the vertebral skeleton of *Callorhynchus*, *Sturio*, *Sphenodon*, a Snake, and the Porpoise, laying stress upon any characters specially peculiar to each.

Or

Describe and compare the limb-girdles of any bony fish and anurous amphibian, and of *Sphenodon*, *Emu* or *Apteryx*, and a mammal.

5. What are the leading facts in the morphology of the Marsipobranchii, and what do you consider their position in the Vertebrate series?

6. Describe and compare in full the adult and milk dentitions of any Marsupial and Placental mammal of which you have a detailed knowledge.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND SENIOR SCHOLARSHIP, 1893.

NATURAL SCIENCE.—(B) ZOOLOGY.

Examiner: Prof. G. B. Howes, F.L.S., F.Z.S.

PAPER b.

You are only permitted to answer four questions.

1. What are the Trilobita, what is their range in Time, and with what living Crustacea do you regard them as most nearly allied?

2. Give an account of the anatomy of any Prosobranchiate Gasteropod, and compare it generally with that of a Chiton and any Rhipidoglossoid form.

3. Describe the structure and detailed relationships of the shell in *Loligo, Sepia, Spirula,* and *Nautilus*; and show, by appeal to extinct forms, in what way these animals are related.

4. Describe the mode of origin and leading modifications of the mammalian placenta. In what other vertebrates is a similar type of placenta known to be formed?

[*Turn over.*

5. Give an account of the trochophore larva. In what classes of invertebrates does it occur, and what, if any, adult forms does it most nearly suggest?

6. Describe and compare the leading facts in the morphology (including development) of the molluscan and vertebrate eyes. What is known of the origin of the supra-œsophageal ganglion of the invertebrata, and of that of the visual organ in relation to it?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND SENIOR SCHOLARSHIP, 1893.

NATURAL SCIENCE.—(B) ZOOLOGY.

Examiner: Prof. G. B. Howes, F.L.S., F.Z.S.

PAPER c.

You are only permitted to answer four questions.

1. Give an account of the distinctive features in the skeletal and visceral anatomy of any bird; and enumerate the leading departures from the type which you select.

2. Give a general account of the structure and distribution in time of *either* the Pterodactyla, Dinosauria, or Anomodontia, and indicate their affinities.

3. Describe the essential structure of the urinogenital organs of Elasmobranchs, Teleosteans, Amphibia, and Amniota, and show how far they may or may not be reduced to a common type.

4. Give an account of the geographical distribution of *either* the Ganoid fishes or the Edentata, and state your knowledge of the palæontological history of the order you select.

[*Turn over.*

5. Give evidence of structural change in the animal body consequent upon the action of the environment. What do you regard as the part played by the action of the environment and by Natural selection, in the transformation of living beings and species formation?

6. Given a collection of animals from a known locality, in what manner, and upon what principles, would you proceed t determine and classify them?

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIP, 1893.

MENTAL SCIENCE.

PAPER a. Psychology and Ethics.

Examiner: Prof. Andrew Seth, LL.D.

1. Discuss the possibility of treating Psychology as a purely natural science.

2. Give an account of the chief psychological theories of space-perception.

3. Give a careful statement of the facts involved in Memory, and critically consider the main theories advanced in explanation of the facts.

4. Trace the psychological elements in the idea of the Self and the stages of its development.

5. Classify the chief forms of æsthetic feeling. Investigate the conditions on which they depend and the possibility of reducing these to a common principle.

6. Discuss fully the question of the origin of voluntary movement.

[*Turn over.*

7. "In human life the object gives us pleasure in the first instance because we desire it. We do not desire it because it gives us pleasure." Explain this statement and examine its bearing on hedonistic theories of the end of action.

8. Explain in what sense you understand Conscience, and consider how far the question of the authority of Conscience depends on the psychological question concerning its origin.

9. Discuss the definition of justice, and point out the various forms of justice that have to be distinguished.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1893.

MENTAL SCIENCE.

PAPER b. Logic.

Examiner: Prof. ANDREW SETH, LL.D.

1. From the proposition, "All that is must be," can you, by any process of immediate inference, get the proposition, "Nothing can be but what is"? Give reasons for your answer. Show also by what logical process you can obtain the inference, "Something that is not, is not what must be."

2. "With a little ingenuity we may convert hypothetical, disjunctive, and inductive arguments into categorical syllogisms." Give examples, and point out what difference, if any, is made by the conversion.

3. Critically examine the relation of Induction to Deduction in view of the conflicting opinions that have been held on the subject.

4. All the methods of causal induction may be reduced to methods of elimination. Explain this statement, and illustrate by reference to Mill's five experimental methods.

5. Explain and exemplify the following:—real propositions, regressive sorites, idola fori, crucial instances, negative instances, consilience of inductions, intermixture of effects, residual phenomenon.

[*Turn over.*

6. Give an exposition of the nature and rules of Historical Evidence. Compare the difficulties of a historical with those of a scientific investigation.

7. Discuss the possibility of a scientific classification of fallacies. Illustrate your remarks by references to some of the best-known schemes of classification.

8. If the ultimate premisses in knowledge are incapable of proof, in what sense is it permissible to speak of their evidence and certainty? Discuss.

UNIVERSITY OF NEW ZEALAND.

B.A. & B.Sc. EXAMINATION FOR HONOURS, 1893.

MENTAL SCIENCE.

PAPER C. HISTORY OF PHILOSOPHY, ANCIENT AND MODERN.

Examiner: Prof. ANDREW SETH, LL.D.

1. Describe the main features of the Sophistic teaching, and the way in which it was met by Socrates and Plato.

2. Give an account of Aristotle's criticism of Plato's Theory of Ideas. How far do you regard it as an advance upon Plato or as a misrepresentation of Plato's meaning?

3. State and criticise Plato's arguments for the immortality of the soul. What is Aristotle's doctrine on the subject?

4. Give some account of the Cynic and Cyrenaic schools. What claim have they to be followers of the Socratic doctrine?

5. Explain the difficulty of the interaction of mind and matter as it appeared to Descartes. How was it treated by Malebranche, Spinoza, and Leibniz?

6. Explain and critically consider Spinoza's use of the terms Substance, Cause, and Freedom, in connection with his general philosophical position.

[*Turn over.*

7. Estimate Berkeley's theory of the material world (*a*) as a criticism of Locke, (*b*) as a sufficient account of the facts.

8. "All knowledge is limited to sense." "Sense gives us no knowledge." How does Kant harmonize these two propositions?

9. What elements in the Kantian philosophy were emphasized and developed by Hegel? In what other directions has Kant's system been developed?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893

LATIN LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

PAPER a.

Translate into idiomatic English, with short explanations of difficulties:—

(A.) Plautus: Pseudulus, Act IV., Sc. II., 1–18.

> BA. Minus malum hunc hominem esse opinor quam esse censebam coquom:
> Nam nihil etiam dum harpagauit praeter cuathum et cantharum.
> PS. Heus tu, nunc occassiost et tempus. SI. Tecum sentio.
> PS. Ingredere in uiam dolo: egomet hic in insidiis ero.
> SI. Habui numerum sedulo: hoc est sextum a porta proxumum
> Angiportum: in id angiportum me deuorti iusserat.
> Quotumas aedis dixerit, id ego ad modum incerto scio.
> BA. Quis hic homo chlamudatus est? aut undest? aut quem quaeritat?
> Peregrina facies uidetur hominis atque ignobilis.
> SI. Set eccum qui ex incerto faciet mihi quod quaero certius.

BA. Ad me adit recta. unde ego hominem hunc esse
dicam gentium?
SI. Heus tu qui cum hirquina barba astas, responde
hoc quod rogo.
BA. Eho,
An non prius salutas? SI. Nullast mihi salus dataria.
BA. Nam pol hinc tantumdem accipies. PS. Iam
inde a principio probe.
SI. Ecquem in angiporto hoc hominem tu nouisti,
te rogo.
BA. Egomet me. SI. Pauci istuc faciunt homines
quod tu praedicas:
Nam in foro uix decumus quisquest, qui ipsus sese
nouerit.
PS. Saluos sum; iam philosophatur.

(B.) Catullus, LXIV., 58–70.

Inmemor at iuvenis fugiens pellit vada remis,
Inrita ventosae linquens promissa procellae.
Quem procul ex alga maestis Minois ocellis,
Saxea ut effigies bacchantis, prospicit, eheu,
Prospicit et magnis curarum fluctuat undis,
Non flavo retinens subtilem vertice mitram,
Non contecta levi velatum pectus amictu,
Non tereti strophio lactantes vincta papillas,
Omnia quae toto delapsa e corpore passim
Ipsius ante pedes fluctus salis adludebant.
Set neque tum mitrae neque tum fluitantis amictus
Illa vicem curans toto ex te pectore, Theseu,
Toto animo, tota pendebat perdita mente.

(C.) Cicero: Pro Flacco, §§ 17, 18.

Caesus est virgis Cymaeus ille Athenagoras, qui in fame frumentum exportare erat ausus. Data Laelio contio est. Processit ille et Graecus apud Graecos non de culpa sua dixit, sed de poena questus est. Porrexerunt manus; psephisma natum est. Hoc testimonium est? Nuper epulati, paulo ante omni largitione saturati Pergameni, quod Mithridates, qui multitudinem illam non auctoritate sua, sed sagina tenebat, se velle dixit, id sutores et zonarii conclamarunt. Hoc testimonium est civitatis? Ego testes a Sicilia publice deduxi; verum erant ea testimonia non concitatae contionis, sed iurati senatus. Quare iam non est mihi contentio cum teste, vobis videndum est, sintne haec testimonia putanda. Adulescens bonus, honesto loco natus, disertus cum maximo ornatissimoque comitatu venit in oppidum Graecorum, postulat contionem, locupletes homines et graves, ne sibi adversentur, testimonii denuntiatione deterret, egentes et leves spe legationis et viatico publico, privata etiam benignitate prolectat. Opifices et tabernarios atque illam omnem faecem civitatum quid est negotii concitare, in eum praesertim, qui nuper summo cum imperio fuerit, summo autem in amore esse propter ipsum imperii nomen non potuerit?

(D.) Tacitus: Annals, XIII. 28.

Manebat nihilo minus quaedam imago rei publicae. nam inter Vibullium praetorem et plebei tribunum Antistium ortum certamen, quod inmodestos fautores histrionum et a praetore in vincla ductos tribunus omitti iussissset. conprobavere patres, incusata Antistii licentia. simul prohibiti tribuni ius praetorum et consulum praeripere aut vocare ex Italia, cum quibus lege agi posset. addidit L. Piso designatus consul, ne quid intra domum pro potestate adverterent, neve multam ab iis dictam quaestores aerarii in publicas tabulas ante quattuor menses referrent; medio temporis contra dicere liceret, deque eo consules statuerent. cohibita artius et aedilium potestas statutumque, quantum curules, quantum plebei pignoris caperent vel poenae inrogarent. et Helvidius Priscus tribunus plebei adversus Obultronium Sabinum aerarii quaestorem contentiones proprias exercuit, tamquam ius hastae adversus inopes inclementer augeret.

1. Give specimens of the dative constructions in Latin (including those in which a gerund or gerundive is contained), and point out which of them are foreign to the prose of Cicero and Caesar.

2. Describe briefly the steps by which the privileges of the patriciate were almost entirely abolished. For what office did patrician birth continue to be a necessary qualification?

3. Give a brief account of *one* of the following, viz. Ennius, Cato the Censor, Varro, Martial, Tacitus.

4. Sketch an outline map of ancient Rome, marking the position of the hills, the Forum, the Circus, the Campus Martius, the Subura, the Velabrum. What was *Roma quadrata*?

5. Write a short account of the contests between the Romans and the Germanic tribes in the reigns of Augustus and Tiberius.

6. It has been said of the Romans that they were not qualified by nature to be either good sailors or good horsemen. Illustrate this statement from their history.

VERSITY OF NEW ZEALAND.

IINATION FOR SENIOR SCHOLARSHIPS, 1893.

GREEK LANGUAGE AND LITERATURE.

Examiner: J. S. Reid, M.A., Litt.D.

Paper a.

ate into idiomatic English, with short explanations of
ficulties :—

Euripides : Phoenissae, 1156–1171.

’Αλλ’ ἔσχε μαργῶντ’ αὐτὸν ἐναλίου θεοῦ
Περικλύμενος παῖς λᾶαν ἐμβαλὼν κάρᾳ
ἀμαξοπληθῆ, γεῖσ’ ἐπάλξεων ἄπο·
ξανθὸν δὲ κρᾶτα διεπάλυνε καὶ ῥαφὰς
ἔρρηξεν ὀστέων, ἄρτι δ’ οἰνωπὸν γένυν
καθῃμάτωσεν· οὐδ’ ἀποίσεται βίον
τῇ καλλιτόξῳ μητρὶ Μαινάλου κόρῃ.
ἐπεὶ δὲ τάσδ’ εἰσεῖδεν εὐτυχεῖς πύλας,
ἄλλας ἐπῄει παῖς σός, εἱπόμην δ’ ἐγώ.
ὁρῶ δὲ Τυδῆ καὶ παρασπιστὰς πυκνοὺς
Αἰτωλίσιν λόγχαισιν εἰς ἄκρον στόμα
πύργων ἀκοντίζοντας, ὥστ’ ἐπάλξεων
λιπεῖν ἐρίπνας φυγάδας· ἀλλά νιν πάλιν,
κυναγὸς ὡσεί, παῖς σὸς ἐξαθροίζεται,
πύργοις δ’ ἐπέστησ’ αὖθις. εἰς δ’ ἄλλας πύλας
ἠπειγόμεσθα, τοῦτο παύσαντες νοσοῦν.

(B.) Aristophanes: Wasps, 1211–1230.

ΦΙΛ. Ὡδὶ κελεύεις κατακλινῆναι; ΒΔΕ. μηδαμῶς.
ΦΙΛ. πῶς δαί; ΒΔΕ. τὰ γόνατ᾽ ἔκτεινε, καὶ γυμναστικῶς
ὑγρὸν χύτλασον σεαυτὸν ἐν τοῖς στρώμασιν.
ἔπειτ᾽ ἐπαίνεσόν τι τῶν χαλκωμάτων·
ὀροφὴν θέασαι, κρεκάδι᾽ αὐλῆς θαύμασον·
ὕδωρ κατὰ χειρός· τὰς τραπέζας εἰσφέρειν·
δειπνοῦμεν· ἀπονενίμμεθ᾽· ἤδη σπένδομεν.
ΦΙΛ. πρὸς τῶν θεῶν, ἐνύπνιον ἑστιώμεθα;
ΒΔΕ. αὐλητρὶς ἐνεφύσησεν. οἱ δὲ συμπόται
εἰσὶν Θέωρος, Αἰσχίνης, Φανός, Κλέων,
ξένος τις ἕτερος πρὸς κεφαλῆς Ἀκέστορος.
τούτοις ξυνὼν τὰ σκόλι᾽ ὅπως δέξει. ΦΙΛ. καλῶς.
ΒΔΕ. ἄληθες; ΦΙΛ. ὡς οὐδεὶς Διακρίων δέξεται.
ΒΔΕ. ἐγὼ εἴσομαι· καὶ δὴ γάρ εἰμ᾽ ἐγὼ Κλέων,
ᾄδω δὲ πρῶτος Ἁρμοδίου· δέξει δὲ σύ.
οὐδεὶς πώποτ᾽ ἀνὴρ ἔγεντ᾽ Ἀθήναις
ΦΙΛ. οὐχ οὕτω γε πανοῦργος οὐδὲ κλέπτης
ΒΔΕ. τουτὶ σὺ δράσεις; παραπολεῖ βοώμενος.

(C.) Herodotus: IX. 33.

Ἕλλησι μὲν Τισαμενὸς Ἀντιόχου ἦν ὁ θυόμενος· οὗτος γὰρ δὴ εἵπετο τῷ στρατεύματι τούτῳ μάντις· τὸν ἐόντα Ἠλεῖον καὶ γένεος τοῦ Ἰαμιδέων Κλυτιάδην Λακεδαιμόνιοι ἐποιήσαντο λεωσφέτερον. Τισαμενῷ γὰρ μαντευομένῳ ἐν Δελφοῖσι περὶ γόνου ἀνεῖλε ἡ Πυθίη ἀγῶνας τοὺς μεγίστους ἀναιρήσεσθαι πέντε. ὁ μὲν δὴ ἁμαρτὼν τοῦ χρηστηρίου προσεῖχε γυμνασίοισι ὡς ἀναιρησόμενος γυμνικοὺς ἀγῶνας, ἀσκέων δὲ πεντάεθλον παρὰ ἓν πάλαισμα ἔδραμε νικᾶν ὀλυμπιάδα, Ἱερωνύμῳ τῷ Ἀνδρίῳ ἐλθὼν ἐς ἔριν. Λακεδαιμόνιοι δὲ μαθόντες οὐκ ἐς γυμνικοὺς ἀλλ᾽ ἐς ἀρηίους ἀγῶνας φέρον τὸ Τισαμενοῦ μαντήιον, μισθῷ ἐπειρῶντο πείσαντες Τισαμενὸν ποιέεσθαι ἅμα Ἡρακλειδέων τοῖσι βασιλεῦσι ἡγεμόνα τῶν πολέμων. ὁ δὲ ὁρέων περὶ πολλοῦ ποιευμένους Σπαρτιήτας φίλον αὐτὸν προσθέσθαι, μαθὼν τοῦτο ἀνετίμα, σημαίνων σφι ὡς ἤν μιν πολιήτην σφέτερον ποιήσωνται τῶν πάντων μεταδιδόντες, ποιήσει ταῦτα, ἐπ᾽ ἄλλῳ μισθῷ δ᾽

οὔ. Σπαρτιῆται δὲ πρῶτα μὲν ἀκούσαντες δεινὰ ἐποιεῦντο καὶ μετίεσαν τῆς χρησμοσύνης τὸ παράπαν, τέλος δὲ δείματος μεγάλου ἐπικρεμαμένου τοῦ Περσικοῦ τούτου στρατεύματος καταίνεον μετιόντες. ὁ δὲ γνοὺς τετραμμένους σφέας οὐδ᾽ οὕτω ἔτι ἔφη ἀρκέεσθαι τούτοισι μούνοισι, ἀλλὰ δεῖν ἔτι τὸν ἀδελφεὸν ἑωυτοῦ Ἡγίην γίνεσθαι Σπαρτιήτην ἐπὶ τοῖσι αὐτοῖσι λόγοισι τοῖσι καὶ αὐτὸς γίνεται.

(D.) LYSIAS: **Κατὰ ᾽Αλκιβιάδου** *ἀστρατείας*, §§ 1–4.

᾽Εγὼ μέν, ὦ ἄνδρες δικασταί, καὶ ὑμᾶς αἰτοῦμαι τὰ δίκαια ψηφίσασθαι, καὶ τῶν στρατηγῶν δέομαι, ἐπεὶ καὶ ἐν τῇ ἄλλῃ ἀρχῇ πολλοῦ ἄξιοι τῇ πόλει γεγόνασι, καὶ περὶ τῶν τῆς ἀστρατείας γραφῶν κοινοὺς εἶναι τῷ τε διώκοντι καὶ τῷ φεύγοντι, καὶ μὴ βοηθοῦντας ᾧ ἂν βούλωνται πᾶσαν προθυμίαν ἔχειν παρὰ τὸ δίκαιον ὑμᾶς ψηφίσασθαι, ἐνθυμουμένους ὅτι σφόδρ᾽ ἂν ἠγανακτεῖτε, εἰ ἐν τῇ ὑμετέρᾳ δοκιμασίᾳ οἱ θεσμοθέται ἀναβάντες ὑμῶν ἐδέοντο καταψηφίσασθαι, ἡγούμενοι δεινὸν εἶναι, εἰ οἱ τιθέντες τὸν ἀγῶνα καὶ τὴν ψῆφον διδόντες παρακελεύσονται τῶν μὲν μὴ καταψηφίζεσθαι τῶν δὲ καταψηφίζεσθαι. τί δ᾽ ἂν αἴσχιον ἔθος ἢ δεινότερον πρᾶγμα τούτου τῇ πόλει γένοιτο, εἰ τολμήσει ὁ μὲν ἄρχων ἐν ταῖς τῶν ἐπικλήρων δίκαις ἀντιβολεῖν καὶ ἱκετεύειν τοὺς δικαστὰς ὅ τι ἂν βούληται πραχθῆναι, ὁ δὲ πολέμαρχος καὶ οἱ ἕνδεκα δεήσονται ἐν ταῖς δίκαις ταῖς ὑφ᾽ ἑαυτῶν εἰσαγομέναις, ὥσπερ καὶ νῦν; χρὴ τοίνυν καὶ ὑπὲρ ὑμῶν αὐτῶν τὴν αὐτὴν γνώμην ἔχειν, ἐνθυμουμένους ὅτι οὐδὲν διοίσει ὑμᾶς ἰδίᾳ περὶ τῆς ἀστρατείας βοηθεῖν, ἢ τούτων τινὰς δεῖσθαι αὐτοὺς τὴν ψῆφον διδόντας.

1. Illustrate (*a*) gnomic tenses, (*b*) mixed constructions in conditional sentences.

2. Describe the regular course of a lawsuit at Athens in the time of Demosthenes, giving the technical terms.

3. Show the ambiguity which attached to the name *σοφιστής* in Classical Greek, and give some account of two of the leading Sophists mentioned by Plato.

4. Give the dates and show the importance of the following battles, viz., Eurymedon, Delium, Oenophyta, Aegospotami, Issus.

5. How did the spread of Greek predominance in the East affect Greek literature, art, and science?

6. Show by references to history that the conduct of Spartan commanders when abroad was often in conflict with the principles of their home training.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: C. Knight Watson, M.A., F.S.A.

PAPER b.

1. To what causes do you attribute the changes in the general cast of thought in the reign of Queen Anne? Show how these changes affected the Literature of that reign.

2. Compare the critical *method* of Johnson and Addison, and take as an illustration their treatment, respectively, of *Paradise Lost.*

3. How does Pope explain the principle on which true taste is founded, and how does he illustrate the errors of the false taste for magnificence? Quote Pope's bitter invective on Addison. What provoked it, and how was a reconciliation ultimately effected?

4. State what you know of the relations between Pope and Swift. What was the *Battle of the Books*?

5. Compare *Gulliver's Travels* with *Utopia.* What doubts, queries, and objections are proposed by the King of Brobdingnag after Gulliver has described the state of England?

6. Who was the great representative of the Idealist school of Philosophy during this Reign? What writings did he leave behind him? They have been called "the finest models of philosophical style since Cicero." Do you agree with this? What did Pope and Atterbury say of their author?

7. State what you know of the *Dunciad*. Give the various and conflicting estimates which have been formed of it. To which of them do you incline? Group together some of the poets and critics whom Pope lashes with his satire.

8. What do you know of the following:—*The Freeholder. The Campaign. Jane Shore. The Drummer. 'All in the Downs.' The Castle of Indolence. The Padlock. The Creation. The Dispensary. Grongar Hill. The Splendid Shilling. The Gentle Shepherd. Sophonisba. Sir Harry Wildair. The Nonjuror. The Beggar's Opera. Drapier's Letters. The Guardian.*

9. Give an account of Addison's Travels on the Continent and of his treatise on *Medals*. *Place* the following quotations by naming their authors and stating their context.

a. 'Tis not in mortals to command success.

b. Fine by degrees and beautifully less.

c. The two noblest things which are sweetness and light.

d. Bread is the staff of life.

e. Westward the course of Empire takes its way.

f. An undevout astronomer is mad.

g. Cruel as death and hungry as the grave.

h. Rides in the whirlwind and directs the storm.

i. Poetic fields encompass me around
And still I seem to tread on classic ground.

k. There is an infinite kind of motions to be made use of in the Flutter of a Fan.

l. He lives to build, not boast, a generous race;
No tenth transmitter of a foolish face.

m. Necessity, the mother of invention.

n. We call it only pretty Fanny's way.

10. Write an Essay on the way in which Shakespeare handled historical facts and authorities as exhibited in his delineation of Henry Prince of Wales (afterwards Henry V.).

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER a.

ranslation, Composition, and Grammar.

ite into English:—

seur dévoré du feu sacré part en tout temps, il ne
mais son baromètre: il manœuvre suivant l'état de
e; mais il chasse parce qu'il a besoin de chasser.
inuit pour se trouver à la pointe du jour à certain
bois où doivent passer les bécasses; les bécasses
au rendez-vous, qu'importe? Il a joui par espé-
ain il jouira par effet. Que dis-je, demain? Mais
st longue, aujourd'hui n'est pas fini. Le chasseur
is la plaine, il bat tous les recoins du bois, il ne voit
dix lieues sans brûler une amorce; il s'en retourne
assé, mais chemin faisant un lièvre part et le lièvre
Dès lors plus de fatigue, rien ne délasse comme le
lièvre. Avant de le tuer on était triste, on marchait
hée, le jarret ployé; mais du moment que l'intéres-

B. Composition.

Translate into French :—

The coach had continued in motion for a mile or two before the stranger had completely repossessed himself of his equanimity, as was manifested by the doleful ejaculations, which he made from time to time, on the too great probability, or even certainty, of their missing the flood-tide. By degrees, however, his wrath subsided; he wiped his brows, relaxed his frown, and, undoing the parcel in his hand, produced his folio, on which he gazed from time to time with the knowing look of an amateur, admiring its height and condition, and ascertaining, by a minute and individual inspection of each leaf, that the volume was uninjured and entire from beginning to end. His fellow-traveller took the liberty of inquiring the subject of his studies. He lifted up his eyes with something of a sarcastic glance, as if he supposed the young querist would not relish, or perhaps understand, his answer, and pronounced the book to be Sandy Gordon's 'Itinerarium Septentrionale,' a book illustrative of the Roman remains in Scotland. The querist, unappalled by this learned title, proceeded to put several questions, which indicated that he had made good use of a good education, and, although not possessed of minute information on the subject of antiquities, had yet acquaintance enough with the classics to render him an interested and intelligent auditor when they were enlarged upon. The elder traveller, observing with pleasure the capacity of his temporary companion to understand and answer him, plunged, nothing loath, into a sea of discussion concerning urns, vases, votive altars, Roman camps, and the rules of castrametation.—*Walter Scott.*

C. Grammar.

1. State some of the various cases in which no article is used in French.

2. Give the plural of Monsieur, Madame, Mademoiselle, Gentilhomme, and translate:—My sister sends her love to your mother.

3. Translate:—The bird's-nest is a wonderful construction. I found a bird's-nest in our garden.

4. Give the 1st person singular of the present indicative of *conquérir, faillir, tressaillir, mouvoir, clore.*

5. How are *more, less,* expressed in French after a numeral?

6. Translate into French :—

(*a*) They repented having lost most of their time.

(*b*) The two brothers have succeeded each other.

(*c*) I like this song : I heard it admirably sung yesterday.

(*d*) Do you not think Miss A. has a charming voice?—
I never heard her sing.

(*e*) They addressed each other several letters.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

FRENCH.

Examiner: M. Jules Bué, M.A.

PAPER b.

Translation and Literary Appreciation.

A. Translation.

Translate into English:—

C'est dommage que les gens d'entendement ayment tant la briefveté: sans doute leur reputation en vault mieulx; mais nous en valons moins. Plutarque ayme mieulx que nous le vantions de son jugement, que de son sçavoir; il ayme mieulx nous laisser desir de soy, que satieté: il sçavoit qu'ez choses bonnes mesme on peult trop dire; et que Alexandridas reprocha justement à celuy qui tenoit aux Ephores des bons propos, mais trop longs; "O estranger, tu dis ce qu'il fault aultrement qu'il ne fault." Ceulx qui ont le corps graile le grossissent d'embourrures; ceulx qui ont la matiere exile, l'enflent de paroles.

B. Period appointed for Special Study.

(*Answers are to be given in English.*)

1. Quels sont les deux grands faits qui dominent l'histoire de la littérature française au seizième siècle?

[*Turn over.*

2. Quel est le premier traité de théologie écrit en français? Quelles sont les qualités qui en font un des premiers monuments durables de la prose française?

3. Dites ce que vous savez de Pierre de la Ramée.

4. Par quel grand nom la science politique est-elle représentée au seizième siècle?

5. Quels sont au seizième siècle les principaux auteurs de mémoires et les principaux historiens?

6. Critiquez l'œuvre de Rabelais.

7. Qu'est-ce que le seizième siècle doit à Amyot?

8. Citez quelques vers de Ronsard et d'un ou deux autres membres de la Pléiade.

7ERSITY OF NEW ZEALAND.

NATION FOR SENIOR SCHOLARSHIPS, 1893.

GERMAN.

Examiner: Prof. ALTHAUS, Ph.D.

PAPER a.

late into German:—

oet worthy of that name, the powers of the intellect
solubly interwoven with the moral feelings, and the
of his art depends not more on the perfection of the
of the other. The poet who does not feel nobly
ly, as well as passionately, will never permanently
in making others feel; the forms of error and
, infinite in number, are transitory in duration;
thought and sentiment, but chiefly of sentiment,
one is eternal and unchangeable. But happily a
in the products of reason and imagination can
ever be divided from at least a love for virtue and
greatness. Our feelings are in favour of heroism,
to be pure and perfect. Happy he whose reso-
re so strong, or whose temptations are so weak,
an convert these feelings into action! The severest
which a proud and sensitive nature can be conscious
rception of its own debasement. The sources of
n life are many; vice is one of the surest. Any
reature tarnished with guilt will in general be
; a man of genius in that case will be doubly so,
eas of excellence are higher, his sense of failure is
n. In such miseries Schiller had no share. The
ts which animated his poetry were converted into
of conduct; his actions were as blameless as his

writings were pure. With his high and simple predilections, with his strong devotedness to a noble cause, he continued to steer through life unsullied by its meanness, unsubdued by any of its difficulties or allurements. With the world, in fact, he had not much to do; without effort, he dwelt apart from it; its prizes were not the wealth which could enrich him. His great, almost his single aim, was to unfold his spiritual faculties, to study and contemplate and improve their intellectual creations. Bent upon this with the steadfastness of an apostle, the more sordid temptations of the world passed harmlessly over him. Wishing not to seem, but to be, envy was a feeling of which he knew but little, even before he rose above its level.—*T. Carlyle.*

II. *Translate into English*:—

Die praktiſche Seite des Ackerbaus kann nicht klarer und tiefer aufgefaßt werden als dies in der Rede des nordamerikaniſchen Häuptlings geſchehen, welche der Franzoſe Crevecour uns überliefert hat. Jener, ſeinem Stamme den Ackerbau empfehlend, ſprach: „Seht ihr nicht, daß die Weißen von Körnern, wir aber von Fleiſch leben? daß das Fleiſch mehr als dreißig Monate gebraucht, um heran zu wachſen, und oft ſelten iſt? daß jedes der wunderbaren Körner, die ſie in die Erde ſtreuen, ihnen mehr als hundertfältig zurückgibt? daß das Fleiſch vier Beine hat zum Fortlaufen, und wir nur zwei, um es zu haſchen? daß die Körner da, wo die weißen Männer ſie hinſäen, bleiben und wachſen? daß der Winter, der für uns eine Zeit der mühſamen Jagden, ihnen eine Zeit der Ruhe iſt? Darum haben ſie ſo viele Kinder und leben länger als wir. Ich ſage alſo Jedem der mich hört: bevor die Bäume über unſern Hütten von Alter werden abgeſtorben ſein, und die Ahornbäume des Thals aufhören uns Zucker zu geben, wird des Geſchlecht der Kornſäer das Geſchlecht der Fleiſchfreſſer vertilgt haben, wofern dieſe Jäger ſich nicht entſchließen, zu ſäen!“ —In ſeinen mühevollen Jagden verbraucht der Indianer durch ſeine Glieder eine große Summe von Kraft, aber die hervorgebrachte

Wirkung iſt ſehr gering und ſteht mit dem Aufwand in keinem Verhältniß. Die Kultur iſt die Oekonomie der Kraft. Die Wiſſenſchaft lehrt uns die einfachſten Mittel erkennen, um mit dem geringſten Aufwande von organiſcher Kraft die größten Wirkungen zu erzielen und mit gegebenen Mitteln ein Maximum von Widerſtänden zu überwinden. Eine jede Kraftäuſſerung, eine jede Kraftverſchwendung in der Agrikultur, in der Induſtrie, ſowie in der Wiſſenſchaft, und namentlich im Staate, charakteriſirt die Rohheit und den Mangel an wahrer Kultur. Darin liegt eben das außerordentliche Uebergewicht an Kraft welches unſre Zeit von allen früheren unterſcheidet, daß die Entwicklung der Naturwiſſenſchaften und der Mechanik, ſowie die genauere Erforſchung aller der Urſachen wodurch mechaniſche Bewegungen und Ortsveränderungen hervorgebracht werden, zur genaueren Bekanntſchaft mit den Geſetzen geführt haben welche den Menſchen befähigen, Naturgewalten die ſonſt Angſt und Entſetzen erweckten, zu ſeinen gehorſamen und willigen Dienern zu machen. Einem Prometheus gleich, hat der Menſch, mit Hülfe des göttlichen Funkens von oben, welcher, genährt durch Religion und Geſittung, die Grundlage aller geiſtigen Vervollkommnung iſt, den irdiſchen Elementen Leben eingeflößt.

Liebig.

III. *Grammar and Idiom* :—

1. Explain and illustrate (*a*) the uses, (*b*) the characteristic grammatical forms of, and (*c*) the peculiarities of construction connected with the auxiliary verbs of mood.

2. The verbs wiegen, bewegen, ſchmelzen, erſchrecken, ſchleifen, in connexion with a difference of meaning, have both a weak and a strong conjugation. Explain this, and show the double meaning of each verb.

3. Analyse and illustrate, as fully as you can, the German compound sentence, in the direct and the inverted form.

4. Give the etymological equivalents in English of ſchaben, greifen, Saft, Stufe, Teig, triefen, Widder, zählen, Zähre, Zunder, Schmerz, Gaſſe, Geiß, Lauch, Rechen, tauchen, Bucht, Bogen; and comment on the difference, as regards vowels and consonants, between the two sets of words.

5. Write down as many verbs, substantives, and adjectives as you can form from the stems of denken, wiſſen, ſehen, and ſitzen.

6. Give the derivation of Uhr, Palaſt, Pfingſten, Tiſch, Truchſeß, Kopf, Welt, fröhnen, hübſch, deutſch.

7. Translate:—Do not mind that. It does not signify. I will run the risk. He will not wink at it a second time. We took that for granted. She has always some fault to find. You are prejudiced against him. The criminal was taken in the act. Whither are you bound? It is getting on towards midnight. That won't do. This money is not current here. Honesty is the best policy. They made short work of the matter. He has found his match. Write a fair copy of this. So many men, so many minds.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

GERMAN.

Examiner: Prof. ALTHAUS, Ph.D.

PAPER b.

(Not more than *six* of the following Questions need be answered. The answers need not necessarily be given in German.)

1. Welche Perſönlichkeiten und Vorkommniſſe waren für die deutſche Literatur der erſten Hälfte des 18ten Jahrhunderts von Bedeutung, und aus welchen Gründen?

2. (*a*) Welche Stellung nahm Friedrich der Große zur deutſchen Literatur ein? (*b*) Inwiefern übte er einen beſtimmenden Einfluß auf dieſelbe aus? und (*c*) wo iſt dieſer Einfluß nachweisbar?

3. Innerhalb welcher Zeitgrenzen entwickelte ſich die klaſſiſche deutſche Literatur? Geben Sie einen Ueberblick über deren hervorragendſten Charakterzüge.

[*Turn over.*

4. Eine vergleichende Parallele zwiſchen Leſſing und Herder (*a*) als Kritiker, (*b*) als Dichter.

5. Analyſe von Leſſing's „Laokoon."

6. Die Sturm- und Drangperiode, (*a*) ihre Urſachen, (*b*) ihre Eigenthümlichkeiten, (*c*) ihre bedeutendſten Vertreter und deren Werke.

7. Goethe's „Fauſt": (*a*) Geſchichte ſeiner Entſtehung. (*b*) Sein Zuſammenhang mit der Fauſtſage. (*c*) Seine Bedeutung als modernes Drama.

8. Verſuch einer allgemeinen Charakteriſtik Goethe's als Dichter und Menſch.

9. Ueberblick über den Lebenslauf Schiller's, mit beſonderer Rückſicht auf die Perioden ſeiner geiſtigen Entwicklung.

10. Schiller (*a*) als Lyriker, (*b*) als Dramatiker, (*c*) als Geſchichtſchreiber.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

ENGLISH HISTORY, 1789–1850.

Examiner: F. YORK POWELL, M.A.

1. Show the importance of the English navy during the great French War.

2. Note the principal *legal* reforms carried out between 1815 and 1850.

3. Account for the distressed condition of the country in 1798.

4. Examine the political careers of Castlereagh and Wellington.

5. How and why was the New Poor Law passed? What are its principles? What have been its effects?

6. How has the Railway affected the social and industrial life of Great Britain?

7. "The growth of a second Colonial Empire is perhaps the most wonderful feature of this period." Explain the causes that produced the colonization of New Zealand.

[*Turn over.*

8. Describe the struggles for (1) Catholic Emancipation, (2) Reform of Parliament, and record the principal arguments for and against these measures.

9. What causes led to the war with the United States in 1812? Describe the Washington campaign and the basis of the treaty of peace.

10. Show (adding sketch-map if possible) the growth of British power in India during your period. Note how the chief accessions of territory came about.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1898.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER C. Elementary Mechanics and Hydrostatics.

Examiner: E. J. Routh, Sc.D., F.R.S.

1. Forces acting at a point O in the directions OA_1, OA_2, &c., are represented in magnitude by $p_1 . OA_1$, $p_2 . OA_2$, &c. Show that their resultant is represented by $\Sigma p . OG$ where G is the centre of gravity of masses proportional to p_1, p_2, &c., situated at A_1, A_2, &c.

ABC is a triangle, having the angle C equal to a right angle, and CN is a perpendicular on AB. Show that forces acting along AC, BC, CN inversely proportional to these lengths are in equilibrium.

2. If three forces acting on a body are in equilibrium show that they must meet in a point or be parallel.

Three small rings, mutually attracting each other, can slide freely on the smooth sides of a triangle ABC, and are in equilibrium in the positions D, E, F. Show that the three perpendiculars to the sides of ABC at D, E, F meet in a point O. Show also that if the attracting forces are proportional to the sides of DEF, the point O is the centre of gravity of the triangle DEF and the symmedian point of ABC.

3. If any number of forces act on a body in one plane, determine the condition that they can be balanced by a single force which is not infinitely distant.

A rod AB without weight, whose length is $2l$, rests over the rim of a smooth circular cylinder with one end A pressing against the vertical interior surface of the cylinder. If a weight be suspended from the end B, and the radius of the cylinder is a, show that $l \sin^3\theta = a$, where θ is the inclination of the rod to the vertical. Show also that if the rod is slightly displaced from the position of equilibrium, the end B begins to move horizontally.

4. Prove that the centre of gravity of a quadrilateral area ABCD is the same as that of four equal particles placed at A, B, C, D together with a fifth of equal but negative mass placed at the intersection I of the diagonals.

If particles whose masses are proportional to the areas BCD, CDA, DAB, ABC are placed at A, B, C, D, prove that the moment about every straight line is the same as that of a particle proportional to twice the area ABCD placed at I.

5. A particle starting from rest at A describes a straight line AB with a uniform acceleration f. Investigate the equation giving the time of describing a given space.

A chord AB is drawn from a point A on a vertical straight line OZ to a point B on a circle whose plane is vertical and contains OZ. Find the positions of A and B when the time of descent from A to B (starting from rest) is less than for all other chords (1) when the chords are smooth and (2) when the chords are rough with a coefficient of friction $\tan \epsilon$. In the latter case show that the inclination of AB to the horizon is $\frac{1}{4}(\pi + 2\epsilon)$.

6. A particle is projected from a given point in a direction making an angle α with the horizon with a velocity V. Find its horizontal and vertical coordinates after a time t.

Find also the times at which its direction of motion is (1) parallel and (2) perpendicular to a straight line making an angle β with the horizon.

7. Investigate the rule to find the resultant pressure on any plane area immersed in a heavy homogeneous fluid.

A triangular area is placed with its plane vertical and its sides successively in the surface. Show that when the pressure of the air is neglected the resultant pressure on the area is inversely proportional to the length of the side in the surface.

8. A body is totally immersed in a fluid and is divided into two parts by a horizontal plane. Show (1) that the resultant pressure on each of the two parts is vertical, and (2) that the resultant of these two pressures is equal and opposite to the weight of the fluid displaced.

A body floats in a fluid of three times its own density, and AB is the plane of floatation. If the body were turned upside down and immersed in a fluid whose density is half that of the former fluid, determine if it would again float with AB for a plane of floatation.

9. Investigate the equation $z = \frac{k}{g} \log \frac{h}{h'}$ to find the difference of the altitudes of two stations at which the heights of the barometer are respectively h and h'.

PHYSICAL SCIENCE.

PAPER a. HEAT, SOUND, AND LIGHT.

Examiner: Principal GARNETT, D.C.L.

Describe the most accurate method you know for deter-
ng the exact temperature at which the density of water is
ximum.

Give an account of any investigations with which you are
ainted having for their object the determination of the
ific heat of water at different temperatures.

Describe any experiments of importance which have been
le for the determination of the mechanical equivalent of heat
e the investigations of Joule, and mention any corrections
h have been made on his results.

How would you determine the actual amount of heat lost
hour from a square foot of blackened metal maintained at a
stant temperature of 100° C., and how would you distinguish
ween the loss due to radiation and that due to contact with
air?

6. Explain fully how the relation between the specific heat of air at constant pressure, and its specific heat at constant volume, may be determined from measurements of the density and pressure of the air and of the velocity of sound therein.

7. A note, its fifth, and its octave are sounded simultaneously, the amplitudes of the vibrations being respectively in the ratios of 6 : 4 : 3. Assuming that the crests of the three waves coincide to begin with, draw the resultant curve of pressure due to the three notes sounding together.

8. A string is connected with a prong of a tuning-fork which makes 120 complete vibrations per second, and it is found that with a stretching weight of 2000 grains the string vibrates in segments three feet long. Find the weight per foot run of the string.

9. State what you suppose to be the nature of homogeneous light and its mode of propagation.

Explain Huyghens's principle, and, in accordance with it, explain the action of a convex lens on a plane wave of light meeting it with the wave-front perpendicular to the axis of the lens.

10. Point out how it becomes possible to construct an "achromatic" object-glass. Are such glasses really achromatic? Compare the methods of securing achromatism in the eye-piece and the object-glass of an astronomical telescope.

11. What is the optic axis of a uniaxal crystal?

A thick plate of Iceland spar is cut from a crystal so that the optic axis is normal to the polished surface of the plate. A beam of light is incident at an angle of 60° with the normal. Describe fully how the beam is affected by the crystal.

Describe the construction of some form of "double image" prism.

12. What is a "bi-quartz" and for what purpose is it chiefly used? Explain how you would arrange the apparatus in order to use a bi-quartz to the best advantage.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

CHEMISTRY.

PAPER a.

Examiner: Prof. T. E. THORPE, Ph.D., B.Sc. (Vict.), D.Sc. (Dubl.), F.R.S.

1. 1·5055 grams of a mixture of sodium and potassium chlorides gave 3·4222 grams of silver chloride. Calculate the relative amounts of the two chlorides.

$Ag=108$; $Cl=35\cdot5$; $K=39$; $Na=23$.

2. Of what value is the Law of Isomorphism in determining the chemical relationships of an element? Give examples.

3. How may the air be liquefied?

4. Give the formulæ of the following compounds of aluminium:—bauxite, mica, garnet, ruby, chlorite, orthoc lase, kaolin. How is metallic aluminium now obtained on a large scale?

5. How is potassium permanganate prepared? What facts have led to the doubling of the empirical formula of this substance? Explain by means of equations its action upon solutions of ferrous sulphate, ferrous ammonium sulphate, oxalic acid, hydrochloric acid, and potassium ferrocyanide.

6. Mention the characteristic blowpipe reactions of arsenic, chromium, mercury, potash, silica, and zinc.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1893.

CHEMISTRY.

PAPER b.

Examiner: Prof. T. E. Thorpe, Ph.D., B.Sc. (Vict.), D.Sc. (Dubl.), F.R.S.

1. Describe the methods employed for the detection of Nitrogen, Sulphur, Phosphorus, and Chlorine in organic substances.

2. Give an account of the more important syntheses of organic substances from their Elements.

3. Describe the mode of preparation and properties of the following substances:—Acetylene; Acetic Anhydride; Acetone; Acetal; Acetamide and Acetonitril.

4. Calculate the vapour-density of Propionitril from the following data obtained by Hofmann's method:—

Weight of liquid	0·0512 gram.
Volume of vapour	80·78 cub. cent.
Temperature	99°·6
Barometer	749·1 mm.
Height of Mercury column in tube	482·0 mm.

5. Give a short account of Van't Hoff and Le Bel's hypothesis of the relation between the optical activity of organic compounds and their chemical constitution.

6. You are required to ascertain whether a sample of Heptane is pure or is mixed with Octane. What experiments would you make in order to determine this point?

IVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
SECOND EXAMINATION.

Elementary Mechanics and Hydrostatics.

Examiner: Prof. T. Hudson Beare, M.Inst.C.E.

. Show how to determine the position and magnitude of the
ltant of two parallel forces acting in a like direction. A
m 5 feet long, the weight of which may be neglected, rests
two supports. One of these supports is at one end and a
ght of 5 tons is suspended 18 inches from it. The other
of the beam overhangs the second support by 12 inches,
to it a cord is attached which passes up vertically over a
d pulley and has a weight of 1 ton hanging from it. Find
pressure on the two supports.

. Find an expression for the relation between power and
ght in a wheel and axle, and also in a compound wheel and
.
t a colliery pit, 1200 feet deep, the winding-wheel is 20 feet
iameter, and the engine-crank 2 feet 6 inches long. The
e weighs when full 70 cwt., and the rope weighs 3 lbs. per
. Find the force exerted by crank when loaded cage is at
om of pit. The empty cage, which weighs 40 cwt., is at the
and is about to descend.

. Find the centre of gravity of a segment of a given circle,
length of whose arc is given.
semicircular piece of plate, 3 feet in diameter and 1 inch
, has a circular hole 6 inches in diameter cut out of it, the
re of the hole being 9 inches from the centre of straight edge
late and on the median line. Find the centre of gravity.

[*Turn over*.

4. State the 3 fundamental laws of motion.
A stone is let fall into a well; the sound of it striking the water is heard 4 seconds after it falls. Neglecting air resistance and assuming that the velocity of sound in air is 1120 feet a second, find depth of well.

5. The resistance to the motion of a train due to friction being 11 lbs. per ton weight, if a train running at 45 miles per hour comes to the foot of an incline of 1 in 180, how far will it run, steam being shut off at the foot?

6. Define Kinetic and Potential Energy.
A shot weighing 1700 lbs. is fired from a 60-ton gun with a muzzle velocity of 2100 feet a second. Find the velocity of recoil of the gun, and the force required to bring it to rest in 4 feet.

7. Find the position of the centre of pressure of a plane rectangular area immersed in water, one edge being at the surface of the water.
A dock gate has a breadth of 35 feet; the water stands at a level of 25 feet inside and 10 feet outside over the sill. Find the pressure on the gate.

8. Describe Sprengel's air-pump.
The receiver of an ordinary air-pump has a capacity 12 times that of the pump-barrel. Find the density of the air in the receiver compared with that of the atmosphere after 6 strokes.

9. Describe the Hydrostatic Press.
The plunger of the pump is 1 inch in diameter and can be subjected to a load of 240 lbs. What size must the main ram be to get a squeeze of 20 tons, assuming 10 per cent. of the power is lost in friction?

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
SECOND EXAMINATION.

Applied Mechanics and Mechanics of Machinery.

PAPER (1).

Examiner: Prof. T. Hudson Beare, M.Inst.C.E.

1. Describe a simple form of friction dynamometer and show how to find the H.P. absorbed by it.

2. Describe Weston's differential pulley-block. What will its mechanical advantage be for any given dimensions? Will such a block overhaul? What would you expect the actual efficiency to be?

3. Deduce an expression for the efficiency of a square-threaded screw of given pitch, given the coefficient of friction. In a certain screw the mean diameter of the screw-thread is 2 inches, the pitch $\frac{1}{8}$ of an inch, and the tangent of the angle of friction $\frac{1}{20}$. Calculate the mechanical advantage, (*a*) neglecting friction, (*b*) taking friction into account.

4. A reservoir 60 feet by 80 feet has to be pumped out; the original depth of water is 18 feet, and the original surface of the water 16 feet below the point of delivery of the water. How many foot pounds of work will be done in emptying it? If the discharge is 500 gallons a minute, what is the average H.P. of the engine driving the pumps, assuming efficiency of whole plant is 50 per cent?

[*Turn over.*

5. Describe with sketches a hydraulic crane. How is a suitable water-pressure obtained for such machinery? If the water-pressure used is 700 pounds per square inch and a load of 5 tons has to be raised 15 feet, find how many gallons of water are used, assuming efficiency is 45 per cent.

6. In a crab the length of the handle is 18 inches and the diameter of the barrel is 9 inches. The gearing is as follows:—A pinion of 20 teeth on the handle shaft gears with a wheel of 60 teeth; on the same axis as latter is another pinion of 22 teeth gearing with a wheel of 88 teeth on the axis of the barrel. Find the force needed to lift $1\frac{1}{2}$ tons.

7. What laws of friction for axle journals have been deduced from the most recent experiments? How do these differ from the laws of friction usually given?

8. Explain by sketches the principle of the compensating lever as used in some locomotives. What is its object?

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
SECOND EXAMINATION.

APPLIED MECHANICS AND MECHANICS OF MACHINERY.

PAPER (2).

Examiner: Prof. T. HUDSON BEARE, M.Inst.C.E.

1. What are the principal forms of constrained motion used in mechanisms? How is constrainment obtained? What is meant by higher and lower pairing? Why is the latter more often used?

2. What is an epicyclic train of gearing? Deduce an expression for the angular velocity of the last wheel as compared with that of the arm.

3. Describe the Peaucellier parallel motion, and prove its absolute correctness.

4. Prove that the 3 virtual centres of any 3 bodies having plane motion lie upon one straight line. Define centrode and axode.

5. Given for a steam-engine, number of revolutions per minute of crank-shaft, and length of connecting-rod as compared with stroke, show how to draw a diagram of piston velocities for the in and out stroke. Use a numerical illustration.

[*Turn over.*

6. Describe with sketches a quick return motion suitable for use in a planing machine.

7. In any mechanism, given a force acting on some one link, show how to determine graphically the magnitude of another force acting in a given direction on another link which will just keep the mechanism in static equilibrium.

8. Show how an eccentric is related to an ordinary crank. Give another instance of expansion of elements.

9. Describe the mechanism known as Hooke's Universal Joint; show its relation to a lever crank chain, and prove its action.

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
SECOND EXAMINATION.

Descriptive Geometry.

Examiner: Prof. T. Hudson Beare, M.Inst.C.E.

1. Construct a scale showing miles, furlongs, and yards, whose representative fraction is $\frac{1}{35200}$, showing 22 yards as the smallest reading.

2. Construct a pentagon having a diagonal equal in length to the diagonal of a square 2·5 inches in the side.

3. Draw the epicycloid and hypocycloid curves for a circle 3 inches in diameter rolling in and on a circle 7 inches in diameter.

4. A parabola has its focus 1 inch from the vertex, draw the curve, and draw a tangent to it from a point outside 3 inches from vertex and 3 inches from the focus.

5. Draw through a given point a line parallel to a given plane, and inclined at an angle of 45° to the horizontal.

6. A cylinder 3 inches in diameter and 6 inches long has its middle point coinciding with the centre of a sphere 4 inches in diameter; the axis of the cylinder makes an angle of 40° with the horizontal. Draw plan of the intersection.

7. A square block 3 inches by 3 inches, and 1 inch thick, supports a 6-sided prism, the height of which is 6 inches, and its base inscribed in a 3-inch circle. Obtain the shadows of the whole.

NIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
SECOND EXAMINATION.

THE STEAM-ENGINE (Elementary).

Examiner: Prof. T. HUDSON BEARE, M.Inst.C.E.

State as fully as possible the principal points in Watt's nt of 1769 for a single-acting engine. Show by sketches he carried them out in his engine, and discuss why the ges he made resulted in such considerable economy of steam.

Describe with sketches a steam-engine indicator as now Point out some of the chief errors in valve-setting which be detected by taking indicator-cards.

What is meant by lap and lead in a slide-valve? What is object? Why cannot steam be cut off very early in the e with a simple slide-valve? Show how to draw a Zeuner's diagram, when you are given the stroke of the valve, unt of lead of valve, and position of piston at cut-off.

Make longitudinal and transverse sections of a Lancashire r. Explain carefully the method of staying the ends, and way the furnaces are constructed. If the diameter of the er is 7 feet, the working steam-pressure 100 pounds per are inch, and a stress of 3½ tons per square inch is allowed he solid plate, what thickness would you make the shell ting?

[*Turn over.*

5. Steam is admitted to a cylinder from a boiler working at 80 pounds per square inch pressure, and there is a drop in pressure between boiler and cylinder of 5 per cent.; the valve cuts off steam at $\frac{5}{8}$ of the stroke, and the clearance volume is equivalent to 10 per cent. of the volume swept by the piston. Assume the pressure of the atmosphere to be equal to 14·7 pounds per square inch and make the following calculations:—

(1) Absolute forward pressure at $\frac{3}{4}$, $\frac{7}{8}$, and end of stroke.
(2) Mean forward pressure during whole stroke.

6. Sketch and describe carefully some form of reversing gear suitable for use in a locomotive. Point out any advantages or disadvantages it may have.

7. The cylinder of a double-acting steam-engine is 27·3 inches in diameter, its piston-rod is 4·9 inches in diameter (there is no tail-rod), the stroke of the piston is 33 inches, the mean steam-pressure 30·74 pounds per square inch, and the revolutions per minute are 55·6. Calculate its I.H.P. If its mechanical efficiency were 80 per cent., what would the brake H.P. be?

8. Sketch and describe a surface condenser.

The temperature of the exhaust steam as it enters the condenser being 216° F., of the hot well 105° F., of circulating water as it enters 60° F., and as it leaves 94° F., calculate how many pounds of condensing water will be needed per pound of steam.

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
THIRD EXAMINATION.

STRENGTH OF MATERIALS IN CONSTRUCTION.

Examiner: Prof. T. HUDSON BEARE, M.Inst.C.E.

1. A hollow cast-iron column has to carry a load of 120 tons; it is 10 feet long, built in at the ends, and is 12 inches in diameter. If a factor of safety of 9 is adopted, what thickness should the metal be?

2. Define limit of elasticity, permanent set, modulus of direct elasticity, factor of safety. Show by a diagram the behaviour of a piece of mild steel when subjected to gradually increasing tensile loads. How can you calculate from such a diagram the work done in fracturing the bar?

3. Given a roof-truss outline, show carefully how you would draw stress diagrams for the wind-pressure, the truss being carried on rollers on one side.

4. A joint of maximum strength has to be made between two pieces of steel plate each $\frac{3}{4}$ inch thick: it is to be a double-riveted butt joint with two straps; calculate size of rivets, and the proper pitch to give them.

5. What is meant by the modulus of cross section of a beam? Show how to obtain it for a cast-iron beam of I section with unequal flanges, either graphically or analytically.

[*Turn over.*

6. Describe with sketches a quick return motion suitable for use in a planing machine.

7. In any mechanism, given a force acting on some one link, show how to determine graphically the magnitude of another force acting in a given direction on another link which will just keep the mechanism in static equilibrium.

8. Show how an eccentric is related to an ordinary crank. Give another instance of expansion of elements.

9. Describe the mechanism known as Hooke's Universal Joint; show its relation to a lever crank chain, and prove its action.

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
THIRD EXAMINATION.

THE STEAM-ENGINE (Advanced).

Examiner: Prof. T. HUDSON BEARE, M.Inst.C.E.

1. Deduce an expression for the maximum theoretical efficiency of a steam-engine which works with the following cycle:—The feed-water is fed into boiler at temperature T_0 and evaporated at a temperature of T_1; engine uses 1 pound of steam per stroke, expanding it adiabatically from T_1 down to T_0, and on the back stroke expels the exhaust steam into condenser at constant temperature T_0.

2. What is the relation of height to speed in a pendulum governor? What is the object of loading such a governor? What will the variation of speed of the engine be for a given lift of governor-balls if the governor is unloaded?

3. Describe the cycle in a Crossley "Otto" gas-engine. How is the ignition of the charge obtained in the most recent form, and how is the engine governed?

4. Deduce an expression for the effect produced by the inertia of the reciprocating parts in a direct-acting steam-engine, (*a*) assuming connecting-rod is infinitely long, (*b*) taking actual length of connecting-rod into account. If the weight of the reciprocating parts is 2 pounds per square inch of piston area, and the speed of the engine 150 revolutions per minute, what is the numerical value of the pressure per square inch of piston needed to set them in motion in case (*a*) above?

[*Turn over.*

5. Given the necessary data, show how to draw a diagram of twisting moments for a single-cylinder engine; explain how you would use it to determine the proper size of the crank-shaft.

6. The flue of a marine boiler is 42 inches in diameter, and it is 7 feet long. The working steam-pressure being 160 pounds per square inch, find the necessary thickness of the plates used in making the flue, (*a*) for a plain flue, (*b*) for a corrugated flue.

7. The cylinder of a non-condensing engine is 30 inches diameter, the stroke of the piston 42 inches, the maximum steam-pressure 60 pounds per square inch above the atmosphere, and steam is cut off at $\frac{5}{8}$ of the stroke. Determine a suitable size for the connecting-rod (which is $4\frac{1}{2}$ cranks long), crosshead pin, and crank pin. Sketch the two ends of the rod, dimensioning your sketches.

8. Calculate the expected I.H.P. for a proposed steam-engine with the following data:—

Steam-pressure 75 pounds per sq. inch absolute, diameter of cylinder 14 inches, stroke 20 inches, cut-off $\frac{1}{4}$ stroke, clearance volume 8 per cent. of cylinder volume, back pressure 4 pounds per square inch absolute. Assume no compression and that release occurs at end of stroke.

Given $\log_{10} 3{\cdot}27 = 0{\cdot}5145$.

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1894.

ROMAN LAW.

Examiner: His Honour Judge Webb, LL.D.

1. Translate and explain the following passage :—

A tutela vel cura possunt excusari exemplo ceterorum munerum : nam et tutelam et curam placuit publicum munus esse. Sed adoptivi liberi non prosunt, in adoptionem autem dati naturali patri prosunt. Item nepotes ex filio prosunt, ut in locum patris succedant : ex filia non prosunt.

2. What is the true conception of *occupatio* considered as a mode of acquiring ownership ? Illustrate the operation of this mode of acquisition.

3. *Omne quod inaedificatur solo cedit*—state the limitations and exceptions to which this principle of law was subject.

4. State the controversy which existed among Roman lawyers as to the true character of *emphyteusis* and how it was finally determined by Zeno.

5. Give a brief account of the different forms of *mortgage* which were recognized by the Roman Law ; and state the circumstances under which they were successively adopted.

6. What was the position of the holder of a *res mancipi* delivered without mancipation ? By what action could he defend his rights ? Under what circumstances would his title become indefeasible ?

[*Turn over.*

5. Steam is admitted to a cylinder from a boiler working
80 pounds per square inch pressure, and there is a drop in pre
sure between boiler and cylinder of 5 per cent.; the valve cuts
steam at $\frac{5}{8}$ of the stroke, and the clearance volume is equivale
to 10 per cent. of the volume swept by the piston. Assume t
pressure of the atmosphere to be equal to 14·7 pounds p
square inch and make the following calculations:—

(1) Absolute forward pressure at $\frac{3}{4}$, $\frac{7}{8}$, and end of stroke.
(2) Mean forward pressure during whole stroke.

6. Sketch and describe carefully some form of reversing ge
suitable for use in a locomotive. Point out any advantages
disadvantages it may have.

7. The cylinder of a double-acting steam-engine is 27
inches in diameter, its piston-rod is 4·9 inches in diamet
(there is no tail-rod), the stroke of the piston is
inches, the mean steam-pressure 30·74 pounds per squa
inch, and the revolutions per minute are 55·6. Calculate
I.H.P. If its mechanical efficiency were 80 per cent., wh
would the brake H.P. be?

8. Sketch and describe a surface condenser.

The temperature of the exhaust steam as it enters the co
denser being 216° F., of the hot well 105° F., of circulating w
as it enters 60° F., and as it leaves 94° F., calculate how ma
pounds of condensing water will be needed per pound of ste

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1894.

INTERNATIONAL LAW AND CONFLICT OF LAWS.

Examiner: His Honour Judge Webb, LL.D.

1. Show that the *Jus Gentium* of the Roman Law did not supply the germ of the International Law of modern times. What was the influence which the Roman Law *did* exercise upon International Law?

2. State the circumstances that led to the Battle of Navarino. On what grounds is the intervention of the Powers in the case of Greece to be justified?

3. Give an account of the controversy which exists as to the claim of dominion over close or narrow seas. What, according to the current of authority, is the limit of such dominion?

4. State Lord Clarendon's answer in 1854 to the question, whether produce of Russia brought over the frontier by land and then shipped in British or neutral vessels would be subject to seizure? What is the rigorous law in such a case?

5. What is the nature and effect of a *Ransom Bill*? What was the question in the case of *Ricard* v. *Bettenham*? What is now the law upon the subject?

6. Give illustrations of the rule that 'the personal capacity, or incapacity, attached to a party by the law of the place of his domicil, is deemed to exist in every other country.'

[*Turn over.*

7. State the principle on which the case of *Birtwhistle* v. *Vardill* was decided; and state Lord Brougham's objection to the decision.

8. State the principles on which executory contracts respecting real estate will be validated and enforced where there is a conflict of laws upon the subject.

9. Distinguish between *primary* and *ancillary* administrations, and show how far they are mutually independent.

10. Show that the doctrine of the English Court of Chancery as to its powers over real estate situate in a foreign country is not warranted by the general principles of International Law.

UNIVERSITY OF NEW ZEALAND.

B.Sc. IN MECHANICAL ENGINEERING, 1893.
THIRD EXAMINATION.

THE STEAM-ENGINE (Advanced).

Examiner: Prof. T. HUDSON BEARE, M.Inst.C.E.

1. Deduce an expression for the maximum theoretical efficiency of a steam-engine which works with the following cycle:—The feed-water is fed into boiler at temperature T_0 and evaporated at a temperature of T_1; engine uses 1 pound of steam per stroke, expanding it adiabatically from T_1 down to T_0, and on the back stroke expels the exhaust steam into condenser at constant temperature T_0.

2. What is the relation of height to speed in a pendulum governor? What is the object of loading such a governor? What will the variation of speed of the engine be for a given lift of governor-balls if the governor is unloaded?

3. Describe the cycle in a Crossley "Otto" gas-engine. How is the ignition of the charge obtained in the most recent form, and how is the engine governed?

4. Deduce an expression for the effect produced by the inertia of the reciprocating parts in a direct-acting steam-engine, (*a*) assuming connecting-rod is infinitely long, (*b*) taking actual length of connecting-rod into account. If the weight of the reciprocating parts is 2 pounds per square inch of piston area, and the speed of the engine 150 revolutions per minute, what is the numerical value of the pressure per square inch of piston needed to set them in motion in case (*a*) above?

[*Turn over.*

11. By a marriage settlement two funds A. and B. are settled. A. fund in trust for the husband for his life, and after his decease in trust for his children, in such shares as he should by will appoint; B. fund in trust for the husband for life, and after his decease in such manner as he should by writing appoint. What is necessary in order that the husband may make a valid appointment of each fund? Can the husband make an appointment of the A. fund in favour of an unborn child, to be vested on his attaining the age of twenty-two years? Give your reason for your answer?

12. A thief steals a horse from A. and sells it to B. B. as owner sells it to C. A. finding the horse in the possession of C. claims it. State your opinion on the respective rights of A., B. and C.?

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1894.

ROMAN LAW.

Examiner: His Honour Judge WEBB, LL.D.

1. Translate and explain the following passage :—

A tutela vel cura possunt excusari exemplo ceterorum munerum : nam et tutelam et curam placuit publicum munus esse. Sed adoptivi liberi non prosunt, in adoptionem autem dati naturali patri prosunt. Item nepotes ex filio prosunt, ut in locum patris succedant: ex filia non prosunt.

2. What is the true conception of *occupatio* considered as a mode of acquiring ownership? Illustrate the operation of this mode of acquisition.

3. *Omne quod inaedificatur solo cedit*—state the limitations and exceptions to which this principle of law was subject.

4. State the controversy which existed among Roman lawyers as to the true character of *emphyteusis* and how it was finally determined by Zeno.

5. Give a brief account of the different forms of *mortgage* which were recognized by the Roman Law; and state the circumstances under which they were successively adopted.

6. What was the position of the holder of a *res mancipi* delivered without mancipation? By what action could he defend his rights? Under what circumstances would his title become indefeasible?

[*Turn over.*

7. What is to be understood by the term *quasi-contract* ? Illustrate the nature of the obligations which might arise *quasi ex contractu* by a reference to the *condictio indebiti* and the *actio negotiorum gestorum* ?

8. State the nature of the *actio familiae erciscundae* and the duties of the *judex* in such an action.

9. State the changes introduced by Justinian as to the rights and liabilities of the *haeres*. In what respect was the position of the Roman heir superior to that of the modern executor ?

10. State the nature of the *judicia publica* and give instances of such prosecutions.

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1894.

INTERNATIONAL LAW AND CONFLICT OF LAWS.

Examiner: His Honour Judge WEBB, LL.D.

1. Show that the *Jus Gentium* of the Roman Law did not supply the germ of the International Law of modern times. What was the influence which the Roman Law *did* exercise upon International Law?

2. State the circumstances that led to the Battle of Navarino. On what grounds is the intervention of the Powers in the case of Greece to be justified?

3. Give an account of the controversy which exists as to the claim of dominion over close or narrow seas. What, according to the current of authority, is the limit of such dominion?

4. State Lord Clarendon's answer in 1854 to the question, whether produce of Russia brought over the frontier by land and then shipped in British or neutral vessels would be subject to seizure? What is the rigorous law in such a case?

5. What is the nature and effect of a *Ransom Bill*? What was the question in the case of *Ricard* v. *Bettenham*? What is now the law upon the subject?

6. Give illustrations of the rule that 'the personal capacity, or incapacity, attached to a party by the law of the place of his domicil, is deemed to exist in every other country.'

[*Turn over.*

7. State the principle on which the case of *Birtwhistle* v. *Vardill* was decided; and state Lord Brougham's objection to the decision.

8. State the principles on which executory contracts respecting real estate will be validated and enforced where there is a conflict of laws upon the subject.

9. Distinguish between *primary* and *ancillary* administrations, and show how far they are mutually independent.

10. Show that the doctrine of the English Court of Chancery as to its powers over real estate situate in a foreign country is not warranted by the general principles of International Law.

UNIVERSITY OF NEW ZEALAND.

B. AND LAW PROFESSIONAL EXAMINATION, 1893

CONTRACTS AND TORTS.

Examiner: Hon. J. MacGregor, M.A.

1. Define warranty. State the classification of cases in s v. *Just.* Is implied warranty excluded in case of sale by ple ?

2. In contracts for the sale and delivery of goods by instal- ts at stated periods, the question has frequently arisen how the instalments are independent or conditional as to per- nance. Explain and give instances of this.

3. When may several writings constitute a sufficient memo- dum to satisfy the Statute of Frauds ? Refer to recent es.

4. What are the rules as to presentment for payment of a . of Exchange and as to notice of dishonour ?

5. When a party contracts with an agent whom he does not w to be an agent generally there is a contract with the disclosed principal, but the limitations of this rule are ortant. State accurately and exemplify these.

6. Trace the history of the law as to wagering contracts. at is the present law on the subject of wagers and of contracts ered into in connection with wagers ? What difference is re between the law in England and in New Zealand on the ject ? Cite cases.

7. Explain and illustrate the distinction between Assigna- ty and Negotiability.

8. Discuss the law as to the legal effects of Impossibility in its tion to Contracts.

[OVER

9. Explain the liability of common carriers. What ar principal statutory provisions on the subject in New Zeal Refer to New Zealand cases.

10. State accurately the rights of a party who has induced to enter into a contract by fraud, or by concealme by misrepresentation.

11. Define actionable negligence, and illustrate your defi with reference to the cases of trespasser, licensee, gues customer.

12. For what does an action for malicious prosecutio What must plaintiff prove, and what are the respective fun of the Judge and the Jury at the trial?

13. Explain the nature and classification of Torts.

14. Discuss the maxim, *Actio personalis moritur cum pe* and state the principal exceptions. Explain and give inst of the application of the maxim, *In pari delicto poti condition defendentis.*

15. Enumerate the circumstances under which an em is liable for personal injuries to a workman.

UNIVERSITY OF NEW ZEALAND.

LL.B. AND LAW PROFESSIONAL EXAMINATION, 1893.

REAL AND PERSONAL PROPERTY.

Examiner—LEONARD O. H. TRIPP, B.A., Barrister-at-Law.

1. Explain the terms Estoppel, Merger, Hotchpot, Mortgage y Demise, Chose in Action, Dower.

2. What are the essentials to a Deed? In what cases are Deeds necessary?

3. Define a Contingent Remainder. What is the difference between a contingent remainder and an executory devise? Within what time must an executory devise or interest arise?

4. In what way may a tenancy be determined? What ength of notice is necessary to determine a tenancy?

5. A person entitled to the rents and profits of a settled state for his life, wishes to lease the estate. Can he do so? f so, state upon what terms and conditions?

6. What are the disadvantages of investing money on cond mortgage?

7. Smith died possessed of real estate in New Zealand ich he had purchased from the Crown. By his will, ith devised his real estate to Trustees upon trust to sell. e Trustees find a purchaser of the real estate, and agree to l at a satisfactory price. The Solicitor acting for the purser searches the title to the land, and finds that it stands in ith's name: State what steps will have to be taken before Solicitor can advise the purchaser that he is safe in paying purchase-money to the Trustees?

8. When is a husband liable for the Contracts of his wife the supply of necessaries, when the Contract by the wife s made—

   (1) While living with her husband?

   (2) While living apart from her husband?

9. When does a Debtor commit an act of Bankruptcy?

10. What is the meaning of a Company—(1) Limited by ares, (2) Limited by guarantee? State some of the reasons ich induce a person to convert his business into a private mpany?

[TURN OVER.

11. By a marriage settlement two funds A. and B. are settled. A. fund in trust for the husband for his life, and after his decease in trust for his children, in such shares as he should by will appoint; B. fund in trust for the husband for life, and after his decease in such manner as he should by writing appoint. What is necessary in order that the husband may make a valid appointment of each fund? Can the husband make an appointment of the A. fund in favour of an unborn child, to be vested on his attaining the age of twenty-two years? Give your reason for your answer?

12. A thief steals a horse from A. and sells it to B. B. as owner sells it to C. A. finding the horse in the possession of C. claims it. State your opinion on the respective rights of A., B. and C.?

UNIVERSITY OF NEW ZEALAND.

. and Professional Examination, 1893

LAW OF EVIDENCE.

INER: HON. J. A. TOLE. B.A. LL.B., BARRISTER AT LAW.

What is meant by "Evidence'? Give the most important
ns of evidence.

Illustrate the distinction between malice in fact and malice in

What are the exceptions to the rule—" A witness must only
facts "?

Are hearsay declarations of deceased persons admissible in
nce? If so, under what circumstances?

Are dying declarations admissible in civil cases?

What is the rule as to the admissibility on a subsequent trial
tements of a witness at a former trial?

Explain and illustrate the kinds of Estoppel.

Can admissions written "without prejudice" be used in
nce under any circumstances?

s secondary evidence of the contents of a lost will admissible?
ument is alleged to have been destroyed by the opposite party,
ce to produce necessary to let in secondary evidence?

In what cases are writings admissible to refresh memory?
a document is put into a witness's hand, but nothing is done
is the opposite party entitled to see it?

Give instances of matters which must be proved by writing.

Discuss the rule and state the exception to it, that extrinsic
ce is inadmissible to contradict, vary, add to, or subtract from a
n document.

One of two prisoners calls a witness who incriminates the
—has the latter a right to cross-examine?

A necessary witness in a cause is about to leave the colony
the trial. Is there any way of obtaining his testimony with-
taining him till the trial?

UNIVERSITY OF NEW ZEALAND.

. AND LAW-PROFESSIONAL EXAMINATION, 1893.

CRIMINAL LAW.

aminer—Hon. T. W. Hislop, Barrister and Solicitor of the
Supreme Court of New Zealand.)

Vhat is the difference between a crime and a civil injury?

State the law as to the responsibility of infants in respect of crimes.

A incites B and C to murder a person. B enters the house and
ts the crime while C watches outside to prevent surprise. B and
o D, who, knowing that the murder has been committed, affords
he means of escape. Describe the relation of each to the crime.
ow each can be indicted, and how he can be punished.

Vhat is necessary to be proved by the prosecution in order to sus-
charge of—

(*a*) Unlawful assembly,

(*b*) Robbery,

(*c*) Perjury?

Vhat is necessary to support a plea of justification to a charge of

State circumstances under which homicide is justifiable, and under
lea are facts adducible.

Mention the different kinds of pleas to an indictment.

A having had a disagreement with his neighbour, shoots at his
and accidentally kills a man of whose whereabouts he was unaware.
at offence is he guilty? Explain reason of answer.

What constitutes an attempt to commit a crime, and of what class
nces is an attempt to commit, a substantive crime?

A person intending to steal puts his hand in another's pocket
ocket is empty. Is the person guilty of a crime? State reason of
nswer.

A Society is formed (but not registered) for the purpose of pro-
g charity or religion, and not for the purpose of gain. Members
thers contribute to the funds. A member appropriates part
funds to his own use—Can he be convicted of larceny or any
offence? Explain answer.

[*Turn over.*

12. Can a person be convicted of an offence in either of the following cases (state reasons for your answers)?—

(*a*) A asks B for the loan of a shilling. B, in mistake, hands him a sovereign. A having left B, discovers that it is a sovereign, and starts off to return it to B, but before he reaches him he changes his mind and appropriates the sovereign to his own use, and when asked denies that he had received it.

(*b*) C gives D what he believes to be a shilling to purchase goods. D orders the goods, and in taking out the coin finds that it is a sovereign. He immediately places the sovereign in his purse, and pays for the goods with his own money. D is shortly after his return asked if he had received a sovereign instead of a shilling, when he replies in the negative.

13. What must be proved in order to convict of larceny the finder of goods?

14. What are the essentials of a confession which can be used against a prisoner?

UNIVERSITY OF NEW ZEALAND

L.B. & LAW PROFESSIONAL EXAMINATION, 1893.

EQUITY.

(Examiner—Charles James Foster, M.A., LL.D.)

Give instances in which a Trust is or is not perfectly created. In
ting a trust of a debt, prior to the Law Amendment Act, state the
culty and how you would have dealt with it. Is notice necessary to
complete assignment of an equitable interest ?

Under what conditions will words of recommendation, &c., in a
be held to create a trust ?

AB purchases of a trustee the trust estate for value. It is sought
et aside the purchase on the ground that AB was effected with notice
the trust. What would be the test of sufficient notice ?

4. Give a form of trust for the benefit of a tenant for life, intended
provide against his bankruptcy, and state how far you consider that
ch a trust may be supported.

5. A trustee purchases a property adjoining the trust estate over which
e cestuique trust is in process of acquiring an easement by actual user.
an he stop the acquisition ?

6. A marriage settlement directs the trustees to invest the trust funds
the purchase of land. In selecting their purchase what are the points
be attended to by the trustees ? Discuss the cases of town and
untry property, and property subject to mortgage.

7. Part of a testator's assets consist of Mexican bonds. The will
ects the executors to convert " with all convenient speed." They sell
bonds in the course of the second year after his death. State the
nsiderations guiding the court in determining as to their liability for loss.

What are the remedies for a breach of trust ? In an action for
npensation what circumstances may be made use of as a bar to
ef ? When may the trust estate be followed, and when not, into the
nds of a purchaser ?

A trustee acting properly defends two suits brought by strangers
inst the trust estate. In one he has a decree against him with costs.
the other he is charged with fraud and obtains a decree with costs.
te his position in both cases in regard to being reimbursed out of the
st estate.

10. In a suit for specific performance what acts of part performance
y be relied on to take the case out of the Stat. Frauds and what is
test of their sufficiency ?

11. In what cases will an infant be taken from the father. Prior to
Act of 1887 what were the mother's rights in regard to its guardian-
p ?

Trace the history of the law with regard to the enforcement of
ements for Separation. Is the *Dum casta* clause implied ? May
visions modifying the father's control of the children be upheld ?

UNIVERSITY OF NEW ZEALAND.

LL.B. AND LAW PROFESSIONAL EXAMINATION, 1893.

STATUTE LAW IN NEW ZEALAND.

Examiner: JOHN W. SALMOND, M.A., LL.B.

1. Give a list of the acts of bankruptcy recognised by The nkruptcy Act, 1892. In what cases is a creditor entitled to esent a bankruptcy petition against a debtor?

2. What is the effect of an adjudication of bankruptcy on:
   (1) The property of the bankrupt,
   (2) Legal proceedings to recover debts owing by the bankrupt,
   (3) Execution against the goods of the bankrupt,
   (4) Distress for rent owing by the bankrupt?

3. Distinguish between the memorandum of association and articles of association of a company incorporated under The mpanies Act, 1882. In what manner and to what extent may ompany alter the provisions of its memorandum of association?

4. State generally the nature of the provisions of The ntractors' and Workmen's Lien Act, 1892. Distinguish ween a lien and a charge under the said Act.

5. What are the provisions of The Adoption of Children t, 1881, and of any amending Acts? State precisely the ct of adoption under the said Act.

6. What provisions as to the appointment of arbitrators are tained in The Arbitration Act, 1890? What is the remedy a party to a submission to arbitration if the other party refuses to concur in the appointment of arbitrators, or (2) mences legal proceedings in respect of the matter submitted arbitration, or (3) refuses to abide by the award of the itrators?

7. What provisions are contained in The Stamp Act, 1882, its amendments as to the stamping of documents executed of New Zealand (1) in accordance with the law of New land, (2) in accordance with the law of the place at which h documents are executed? What is the stamp duty on ls of exchange and promissory notes, and when and by whom ould such documents be stamped?

8. What are the provisions of:
   (1) The Demise of the Crown Act, 1888,
   (2) The Intercolonial Probate Act, 1879?
   In what manner and by what Act has the latter Act been amended?

9. What are the chief provisions of The Printers and ewspapers Registration Act, 1868?

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1893.

PRACTICE AND PROCEDURE.

aminer: FREDERICK FITCHETT, M.A., LL.D.,
BARRISTER-AT-LAW.

w is Service to be effected on (1) Infants; (2) Partners
tners, but not in the name of the firm; (3) Corporations;
rated Companies.

te the rules as to Consolidation of Actions.

te the procedure to discontinue an Action as to one
al Defendants.

te the rules as to Payment into Court. How is
ight to continue the Action affected by his uplifting
into Court?

ore whom may Affidavits be sworn (1) in the Colony;
he Colony?

e the procedure to obtain a Charging Order (1) before
(2) after Judgment. When should the Order be
en Absolute in First Instance?

whom, under what circumstances, and on what
ay Grant of Letters of Administration *cum testamento*
btained?

e the procedure when Grant of Probate is opposed.

e the procedure when Wife (petitioner) seeks Alimony

te the procedure to Show Cause against a Decree *Nisi*
ion of Marriage.

hat proceedings may be removed by the Supreme
he Court of Appeal by the consent of the parties?

ithin what time must an Appeal be brought (1) from an
y Order, (2) in other cases? How is the time

UNIVERSITY OF NEW ZEALAND.

Examination of Solicitors admitted elsewhere applying for admission in New Zealand, 1893.

GENERAL LAW.

Examiner—Martin Chapman, Barrister-at-Law.

1. What is the difference between a Specific, a Demonstrative, and a General Legacy? To which of them do the rules of ademptions apply? Define ademption?

2. To what extent may parol evidence be admitted to construe a Will?

3. What is a covenant running with the land? Give rules for determining what covenants will run with the land, and name some covenants which have been decided to run with the land?

4. Explain what are fixtures as between landlord and tenant? Within what time must a tenant exercise his right to remove fixtures?

5. What provision is made by the Statute of Frauds with regard to the sale of goods, the sale of land, and contracts to be performed at a future time? What is the meaning put by Courts on a contract to be performed within a year?

6. Define Libel and Slander? In what cases is it necessary to allege special damage in an action for Slander?

7. State in what manner the status and legal rights of married women have been altered by recent legislation?

8. Define the following crimes:—

   Obtaining goods or money under false pretences; Embezzlement; Conspiracy.

9. Under what circumstances will a death from an injury received in a friendly sparring or boxing match amount to manslaughter?

10. Define hearsay evidence? What exceptions are there in criminal cases to the rule that hearsay evidence is not admissible?

VERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1894.

ROMAN LAW.

Examiner: His Honour Judge **Webb**, LL.D.

e the true nature of *jus postliminii* and show its
n with reference to the *jus potestatis,* the *lex Atilia,*
w of *wills.*

vhat way was the enjoyment of property in Rome
aliens? Show how the process led to a revolution
nan Law of Property.

t do you understand by *actiones arbitrariae*? Give
of such actions in the case of purchasers with a
tle, of *landlord* and *tenant*, and of *mortgagor* and

tius and Seius agree between themselves that two-
e profit of a *partnership* shall belong to Titius and
of the loss, and that two-thirds of the loss shall
Seius and one-third of the profit, ought such an
to be regarded as valid? Discuss the question.

itius agrees with a goldsmith that the goldsmith
f his own gold make certain rings and receive say,
what is the true nature of the contract?

and by whom, was the sanction of law first thrown
usts ?

[*Turn over.*

7. State the Roman Testamentary Law as to conditions in restraint of *alienation,* and as to conditions in restraint of *marriage.*

8. Give the equivalents, in the Roman Law, of a tenancy from year to year, of an estate for life, and of a fee-farm grant or perpetual lease. State any points of difference between them which suggest themselves to you.

9. State the objects of *beneficium discussionis,* of *beneficium cedendarum actionum,* and of *beneficium divisionis;* and show how far these 'benefits' are recognized or repudiated in English law.

10. What is the juridical characteristic of *delict?* How comes it that the Institutes regard rights arising *ex delicto* as obligations?

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1894.

INTERNATIONAL LAW AND CONFLICT OF LAWS.

Examiner: His Honour Judge WEBB, LL.D.

1. State the origin of the so-called *Interventions* of Austria and Prussia in Schleswig Holstein. Were they in reality exceptions to the general rule of non-intervention?

2. State the principle and limit of the *Right of Search*. State the occasions on which the right has been denied. State the limitation of the right insisted on by the United States.

3. State some of the applications of the *Jus Postlimi* which are recognized in International Law.

4. Give a brief summary of the provisions of the *Foreign Enlistment Act*. What was actually decided in the case of the *Alexandra*? What was the question raised in the case of the *Alabama*?

5. State the general rule as to the conveyance of *hostile despatches* in time of war, and the exceptions which have been engrafted on the rule.

6. State the principal points of diversity in the laws of different nations in matters of contract on which a conflict of laws may arise.

[*Turn over.*

7. A new contract founded on a new consideration, although in relation to property respecting which there have been prior unlawful transactions between the parties, is not in itself unlawful. Explain and illustrate this remark of Story's.

8. What will be the effect of a change of *domicil* on a will of personal property if it is valid by the law of the testator's domicil when it was made, and not valid by the law of his domicil when he died?

9. If a *voluntary assignment* giving preference to certain creditors be valid in one country, and come to be adjudicated on in another country where such an assignment would be treated as a fraud upon the other creditors, by what principles is the operation of the assignment to be governed?

10. What is the principle on which effect is given to *foreign judgments* by the Courts of England? In what respects will the Courts permit them to be impeached?

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1893.

JURISPRUDENCE.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. State and examine Austin's theory of "Status."

2. What legislation is competent to the Legislature of New Zealand which would be *ultra vires* of the Congress of the United States?

3. Enumerate the several rules to which the name of "custom" is usually applied. Criticize the respective views of Austin and Maine as to the relation of custom to law.

4. Analyze the notion of "Sovereignty." Show by reference to the facts of history how the aggregation of powers, implied in sovereignty, has been evolved.

5. To what extent did the notion of "crime" in the strict sense enter into the Anglo-Saxon law? Show the connection between the earliest conception of crime and religious ideas.

6. Give an account of the Roman doctrine of *infamia.* What light does it throw on the evolution of Roman Law?

7. "The ancient family is even more a religious than a natural corporation." Examine and illustrate this proposition.

[*Turn over.*

8. State and criticize the views of Savigny and Ihering as to the historical nature of possession in the Roman Law.

9. What explanations have been given of the obligation in some systems of law imposed upon a brother of marrying a deceased brother's wife? What light, if any, is thrown by comparative jurisprudence on the principle of prohibited degrees in marriage?

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1893.

PRINCIPLES OF LEGISLATION.

Examiner: W. A. Hunter, M.A., LL.D., M.P.

1. Enumerate and state the principles which, according to Bentham, are antagonistic to Utility.

2. State with precision "cases unmeet for punishment" in Bentham's view.

3. State the principles that have influenced legislation on the subject of divorce, illustrating your answer by reference to the Roman Law, the Canon Law, and the law of modern Christian countries.

4. Trace the different meanings attached to the phrase "Law of Nature." What influence has this conception exercised over the course of legislation?

5. Sketch shortly the political philosophy of Hobbes.

6. Classify and describe the several aims or ideals for the realization of which the State exists.

[*Turn over.*

7. Is the enforcement of contracts a legitimate branch of the functions of the State? What attitude does the State in China adopt on this subject?

8. Is the *gens* or tribe evolved by an aggregation of families?

9. Mention the leading characteristics of the militant and industrial types of society, especially with respect to the sphere of legislation.

UNIVERSITY OF NEW ZEALAND.

MUS. BAC. INTERMEDIATE EXAMINATION, 1893.

(Examiner—G. F. Tendall, Mus Bac., Oxon.)

What do you understand by the term :—" Golden Age of Eccles-
ical Music ?" Name some of the most celebrated writers of that
od.

Write a short history of the " Sonata."

What do you know of the origin of the Time Table and Clefs ?

Give a short history of the Art of Counterpoint.

In what year was Handel's "Messiah" composed ? Give particulars
s first performance and reception.

Explain how the staves at present in use are derived from the old
e of eleven lines.

Name the greatest living musicians of the following countries, and
what compositions are they particularly famous :—Germany, Italy,
nce, and England.

Write a short life of one of the following :—Gluck, Schumann, or
ndelssohn.

9. Name some of the chief musicians of Europe who were con-
nporary with Beethoven.

UNIVERSITY OF NEW ZEALAND.

FIRST EXAMINATION FOR BACHELOR OF MUSIC.

(I.) ACOUSTICS.

Examiner: Principal GARNETT.

1. Describe the nature of the atmospheric "waves" which correspond to a musical note (pure tone). With what velocity are sound-waves transmitted (*a*) by air, (*b*) by water?

2. Describe the siren and explain how it may be used for the determination of the pitch of a note.

3. According to what law does the intensity of sound vary with the distance from the sounding body, when the body is very small as compared with this distance? Explain by help of a diagram the reason for your answer. When the vibrating body is very large, as a sheet of ice set in motion by curling stones, does this law hold?

4. A cord, the extensibility of which may be neglected, is 96 feet long and hangs vertically, carrying a weight of two pounds at its lower end, while the cord weighs one ounce per foot run. Transverse waves are sent up the cord. Compare the velocities with which they travel at the bottom, middle, and top of the cord.

5. An open and a closed organ-pipe sound the same fundamental note. Is the former exactly twice the length of the latter, and, if not, why not?

What difference would be noticed in the qualities of the two notes assuming that the pipes were of the same diameter and made of the same kind of wood, and to what causes would these differences be due?

[*Turn over.*

6 When sound passes obliquely from air into water, in which direction is it refracted?

A gun is fired on the shore of a deep lake, 20 feet above the level of the water, and the same distance measured horizontally from the water's edge. Will it be heard by the fishes? Give fully the reason for your answer.

7. What is a resonator? How would you construct a resonator from a deep cylindrical glass vessel partly filled with water so as to determine the wave-length of the fundamental note of a tuning-fork?

What upper partials would you expect to find in the "clang" of a tuning-fork?

8. Give the vibration ratios corresponding to the intervals of a fifth, a major third, a major sixth, a minor third, and a fourth.

9. Give a brief description of the phonograph, with special reference to the manner in which it receives and reproduces sounds of particular qualities.

10. What are Chladni's figures? Explain precisely how you would exhibit them to a class.

Explain the cause of the periodic rise and fall in intensity frequently noticed in the sound of a bell as it is dying away.

11. A tuning-fork is sounding, the prongs being nearly vertical. Will the sound be of equal intensity in all horizontal directions around the fork? Explain fully how the waves from the two prongs will affect the air.

12. Explain the formation of combination (difference and summation) tones, and mention some instances in which discords are introduced by these tones.

13. State Helmholtz's theory of the vowel sounds, and describe some method of analysing them.

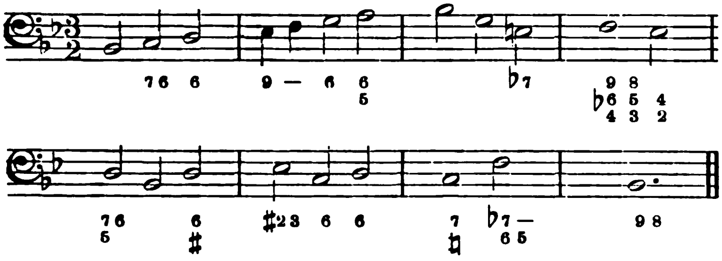
UNIVERSITY OF NEW ZEALAND.

MUS. BAC. FIRST EXAMINATION, 1893.

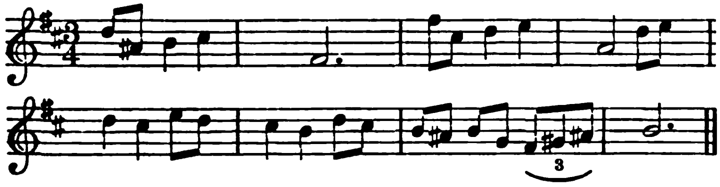
HARMONY.

Examiner: Professor J. **Frederick Bridge**, Mus. Doc.

1. Add 3 parts to following Bass:—



2. Add 3 Vocal parts below following melody:—



3. Treat the following as a "Ground Bass" and add a short Coda. Harmonize it in 4 parts:—

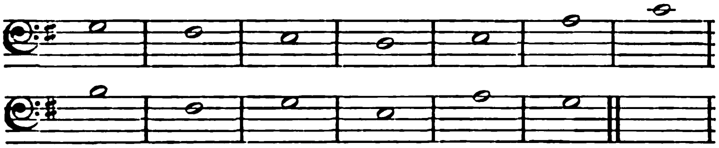
UNIVERSITY OF NEW ZEALAND.

MUS. BAC. FIRST EXAMINATION, 1893.

COUNTERPOINT.

Examiner: Professor J. **Frederick Bridge**, Mus. Doc.

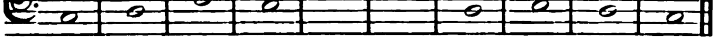
1. Add a counterpoint to this Canto Fermo: Bars 1 to 4 in the 2nd species, 5 to 8 in the 3rd species, and the rest in the 5th species:—



2. Give examples (in three parts) of all the prepared dissonances which are available in the 4th species, preparing and resolving each.

3. Explain your use of a "Pedal" in this species, and write an example.

4. Add two parts above this Canto Fermo, one in the 3rd and the other in the 4th species, making a 3-part example:—



5. Transpose the Canto Fermo in question 4 an 11th upwards, and add two florid counterpoints to it, one above and the other below, making a 3-part example.

UNIVERSITY OF NEW ZEALAND.

TERMEDIATE MEDICAL AND MUSICAL EXAMINATION.—1893.

PHYSICS.

Examiner: PROF. F. D. BROWN.

Distinguish between the real and the apparent thermal nsion of a liquid, and explain the method by which the absolute nsion of mercury has been measured.

A vessel having a capacity of 1,000cc. contains dry air at 0°C 700^{mm}. If a small quantity of water is introduced, and the el closed and heated to 30°C, what will be the pressure of the st air?

Tension of aqueous vapour at 30°C $= 31{\cdot}55^{mm}$.

A piece of lead weighing 250 grams, and having a temperature 00°C, is dropped into a hole cut in a block of ice. How much is melted?

Specific heat of lead $= {\cdot}0314$.

Upon what properties of a body does its rate of cooling d? A silver ball and a thin glass bulb filled with mercury he same diameter and are heated to the same temperature. of the two would you expect to cool the most rapidly when d to the air? Give reasons for your answer.

escribe some method of measuring the velocity of sound in h can be carried out in an ordinary room.

w would you determine accurately the vibration number of tuning-fork? The sound emitted by the fork differs from ined by sounding the same note on a violin. How do you or this?

en a ray of light passes through a prism there is minimum when the angles of incidence and emergence are equal. under these circumstances $\sin \frac{D+A}{2} = \mu \sin \frac{A}{2}$ where ngle of deviation, A the angle of the prism, and μ the ndex of the glass.

[P. T. O.

UNIVERSITY OF NEW ZEALAND.

RMEDIATE MEDICAL AND MUSICAL EXAMINATION.—1893.

PHYSICS.

Examiner: PROF. F. D. BROWN.

istinguish between the real and the apparent thermal ion of a liquid, and explain the method by which the absolute ion of mercury has been measured.

vessel having a capacity of 1,000cc. contains dry air at 0°C 0$^{\text{mm}}$. If a small quantity of water is introduced, and the closed and heated to 30°C, what will be the pressure of the ir?

Tension of aqueous vapour at 30°C = 31·55$^{\text{mm}}$.

piece of lead weighing 250 grams, and having a temperature °C, is dropped into a hole cut in a block of ice. How much melted?

Specific heat of lead = ·0314.

pon what properties of a body does its rate of cooling l? A silver ball and a thin glass bulb filled with mercury he same diameter and are heated to the same temperature. of the two would you expect to cool the most rapidly when d to the air? Give reasons for your answer.

escribe some method of measuring the velocity of sound in ich can be carried out in an ordinary room.

ow would you determine accurately the vibration number of n tuning-fork? The sound emitted by the fork differs from btained by sounding the same note on a violin. How do you t for this?

When a ray of light passes through a prism there is minimum ion when the angles of incidence and emergence are equal. that under these circumstances $\sin \frac{D+A}{2} = \mu \sin \frac{A}{2}$ where the angle of deviation, A the angle of the prism, and μ the tive index of the glass.

[P. T. O.

UNIVERSITY OF NEW ZEALAND.

INTERMEDIATE EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

BIOLOGY.

Examiner: PROFESSOR PARKER, F.R.S.

Six questions to be answered.

1. Explain the terms *Struggle for Existence* and *Natural Selection*, giving examples.

2. Compare the process of sexual reproduction in *Mucor*, *Spirogyra*, *Nitella* (or *Chara*), and an Angiosperm.

3. Describe the structure of the stem in a Monocotyledon and a Dicotyledon: how does the increase in the thickness of the stem take place?

4. Contrast the nutritive processes of plants with those of animals.

5. Describe the microscopic structure of striped and of unstriped muscle, and state what you know of the occurrence of these tissues in the animal kingdom.

6. Describe and draw a diagram of the course of the circulation of the blood in a crayfish, any fish (*Mustelus*, *Raia*, or *Teleost*), and a rabbit.

7. Compare the bones of the shoulder-girdle and fore-limb in the pigeon and the rabbit.

8. Give an account of the development of the brain and spinal cord in any vertebrate animal.

UNIVERSITY OF NEW ZEALAND.

FIRST PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

ORGANIC CHEMISTRY.

Examiners: { PROF. J. G. BLACK, M.A., D.Sc.
JOHN R. DON, M.A., B.Sc.

Candidates must not attempt more than EIGHT *questions.*

) Define the following terms, giving two examples of the application of each:—Polymeric, metameric, homologus, isomorphous, ketone, secondary alcohol, amide, glyceride.

) How would you prepare hydrocyanic acid *(a)* on a small scale by the synthesis of its elements; *(b)* on a large scale?

How would you determine the quantity of HCN in a dilute aqueous solution of the acid?

) A colourless liquid is supplied to you which is known to be one of the following:—*(a)* ethyl alcohol, *(b)* acetone, *(c)* acetic aldehyde, *(d)* common ether. How would you determine which of the four it is?

) How is oxalic acid prepared on a large scale? How would you distinguish between an oxalate and an acetate, and between a formate and an oxalate?

) Describe fully how you would prove that the formula of carbon disulphide is CS_2. What volume of *(a)* carbon dioxide and *(b)* sulphur dioxide, measured at normal temperature and pressure, would be produced by the complete combustion of a kilogramme of carbon disulphide?

) State what you know of Urea under the following heads:—

(a) How it may be prepared from inorganic materials.

(b) How it may be prepared from urine.

(c) The products of its spontaneous decomposition (giving equations).

(d) The effect of heat on it.

(e) Qualitative tests for it.

(7) How does glucose occur in nature?

How would you prepare it from *(a)* starch, *(b)* cane-sugar, *(c)* cellulose.

How would you detect its presence, and determine the quantity, in a given sample of urine?

(8) A certain urinary calculus is known to be one of the following:—*(a)* an oxalate, *(b)* a phosphate, *(c)* uric acid, *(d)* urate of ammonia. How would you determine which of the four it is?

(9) How is tartar-emetic made? Give its formula, and qualitative and quantitative tests for it.

(10) Each of four organic compounds has the following percentage composition:—

C 40 per cent.
H 6·$\dot{6}$ per cent.
O 53·$\dot{3}$ per cent.

Their molecular weights are respectively 30, 60, 90, and 180. Give the names and formulae of the four compounds.

UNIVERSITY OF NEW ZEALAND.

FIRST PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

ANATOMY.

Examiners: { PROFESSOR SCOTT, M.D.
L. E. BARNETT, M.B., F.R.C.S.

(1) Describe the muscles attached to the metacarpal bone and to the phalanges of the thumb.

(2) Describe the Ischio-rectal fossa, and its contents.

(3) Describe the course and relations of the Lateral Sinus.

(4) Describe the formation and course of the Musculo-spiral nerve. Name the muscles supplied by it directly or by its branches. Indicate its cutaneous distribution.

(5) Describe the grey matter in the Cord in the cervical region, and show how it is modified in the lower part of the Medulla.

UNIVERSITY OF NEW ZEALAND.

SECOND PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

PATHOLOGY.

Examiners : { W. S. ROBERTS, M.R.C.S.
F. H. JEFFCOAT, M.B., C.M.

(1) Discuss the etiology of embolism. What are the naked eye and microscopical changes consequent on an infarction of the Spleen and of the Brain?

(2) Describe the various forms of Angioma, and give usual situations.

(3) What Nematode worms infest man? Give a succint account of the life-history of Filaria Sanginis Hominis.

(4) Mention the causes giving rise to increase of connective tissue in the Liver, and describe the naked eye and microscopical characters produced in each case.

(5) Describe the condition of Pulmonary collapse, giving its causes and consequences.

UNIVERSITY OF NEW ZEALAND.

SECOND PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

PHYSIOLOGY.

Examiners : { PROFESSOR SCOTT, M.D.
F. H. JEFFCOAT, M.B., C.M.

(1) Describe carefully the microscopic appearances of a specimen of blood mounted on a warm stage. What changes will occur in blood when acted on by (*a*) heat, (*b*) cold, (*c*) electricity, (*d*) solution of carmine, (*e*) acetic acid, (*f*) water, (*g*) dilute alcohol, (*h*) saturated solution of cane sugar, (*i*) 2 per cent. solution of NaCl.?

(2) What is the chemical composition of saliva? What are its functions? Discuss the physiology of secretion in the case of the submaxilliary gland, and the effects on it of the division of nerves, and the administration of atropin, and pilocarpin.

(3) Describe the income and output of sulphur.

(4) How is voice produced and modified?

UNIVERSITY OF NEW ZEALAND.

SECOND PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

MATERIA MEDICA.

Examiners: { JOHN MACDONALD, L.R.C.P. & S.
J. M. L. DAVIES, M.R.C.S., L.R.C.P.

(1) Mention the official preparations of strong solution of perchloride of iron, and the doses.

What is the action of iron on the blood and tissues?

(2) State the dose, action, and uses of nitrate of silver.

(3) Give the strength and the dose of the different tinctures containing opium. How does the action of morphine differ from that of opium?

(4) What is chrysarobin? Give the dose, action, and uses, and mention the official preparation.

(5) State the dose, action on the temperature, and therapeutic uses of phenazone.

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

SURGERY.

Examiners : { WILLIAM BROWN, M.B., C.M.
WILLIAM E. COLLINS, M.B., M.R.C.S.

(1) What are the causes, symptoms, diagnosis, and treatment of disease of the sacro-iliac joint?

(2) What are the diseases of the Prostate gland? Give their symptoms and the methods you would adopt in their differential diagnosis.

(3) Describe the characters of the Hard and Soft Chancres. Give the several points in their history and progress which bear upon the question of diagnosis between them. Mention in full the possible complications and consequences, both local and distant, of the soft kind only.

(4) Describe the signs, symptoms, and morbid changes which characterize the so-called "white swelling" of the knee joint from its earliest to its latest stages.

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

PRACTICE OF MEDICINE (FIRST PAPER).

Examiners: { W. FELL, M.B., Oxon., M.R.C.S.
L. E. BARNETT, M.B., F.R.C.S.

Mention the symptoms of Exophthalmic Goitre and state the views held regarding the pathology of this affection.

Describe in as few words as possible the principle diseases to which the spleen is especially liable, and state briefly the recent views of the function of that organ.

There are two forms of Acne Rosacea recognised (1) the non-hypertrophic, (2) the hypertrophic form. Discuss the causes, symptoms, and treatment of the two kinds.

Give the differential diagnosis and the treatment, including two prescriptions, of simple gastric ulcer.

Give a list of the causes of Ascites. State the treatment, including two prescriptions for a case due to heart-failure.

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

November, 1893.

PRACTICE OF MEDICINE (Second Paper)

Examiners: { W. Fell, M.B., Oxon., M.R.C.S.
L. E. Barnett, M.B., F.R.C.S.

CASE FOR COMMENTARY.

J.L., aged 43, has held various occupations, was last a ship's ward.

History—Six years ago left off work on account of weakness a tired feeling in the body. He had no pain then but had flesh. He had a cough, and it was thought he was going consumption. No history of syphilis or other serious disease.

Two years ago he began to lose power markedly in his s, first in his right arm, then in his left, then in his legs. year ago he could just stand but could not walk.

Present Condition—He is exceedingly emaciated, and the cles are uniformly wasted. He cannot now move any part of frame except his head and the muscles of his face. He has rol over rectum and bladder. He has no bedsores. The costal muscles are paralysed, and respiration is purely hragmatic. His arms lie applied to the side, the forearm d and pronated, the hand flexed on the forearm and the rs flexed on the palm. In the case of the lower limbs there gidity, tremors, ankle-clonus, and increased tendon reflexes superficial and deep. The legs are occasionally drawn up luntarily, and then as the spasm subsides they are slowly nded again. It is possible for one to flex or extend his arms im, but only by the exercise of great force, and the attempt ove them causes excruciating pain. Independently of any pt at movement he suffers a great deal of gnawing pain. e is evidence of tubercle in the lungs, and there is an ill-ed firm swelling to be felt over the spines of the 4th to 7th cal vertebræ. This does not cause him any pain, and was found out by accident. His mind is perfectly clear, and the organs are healthy.

Comment at length on the possible causes of the above con-n, and state what you would expect to find on *post mortem* ination.

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

MEDICAL JURISPRUDENCE.

Examiners: { F. OGSTON, M.D.
F. TRUBY KING, M.B.

(1) What are the principal forms in which derivatives of Papaver Somniferum are taken by the laity with suicidal intent? What is the average toxic dose of each for an adult? State any reasons which may influence the effect of the dose in particular individuals.

(2) By what characters can you distinguish a gunshot (bullet) wound, the result of suicide, from that of homicide? What are the primary dangers of such a wound?

(3) What are the points you are required to prove for the prosecution in the P.M. examination of a dead infant?

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

MIDWIFERY AND GYNÆCOLGGY.

Examiners: { W. FELL, M.B., L.R.C.P.
FERD. C. BATCHELOR, M.D., M.R.C.S.E.

(1) Treatment of a case of severe flooding due to a miscarriage.

(2) Diagnosis and treatment of a labour with face to the pubis presentation.

(3) Give the measurements of the different diameters of a normal adult female pelvis, and a normal fœtal head, at term; mention the various modes of treatment appropriate to various degrees of contraction of the pelvic brim.

(4) What are the symptoms of effusion of blood into the Fallopian tube?

(5) Causes, pathology and treatment of erosions of the os uteri.

(6) Enumerate symptoms to be commonly found in a new born infant which has inherited syphilis, and the common causes of death in syphilitic infants.

UNIVERSITY OF NEW ZEALAND.

THIRD PROFESSIONAL EXAMINATION IN MEDICINE.

NOVEMBER, 1893.

PUBLIC HEALTH.

Examiners : { F. OGSTON, M.D.
F. TRUBY KING, M.B.

(1) Describe the means by which subsoil drainage may beneficially influence the climate of a district. What diseases are supposed to be most affected by subsoil drainage?

(2) What are the most desirable precautions for checking the spread of each of the following diseases, say in a small township—Measles, Scarlet fever, Typhoid fever, Diphtheria?

(3) What should be the dimensions of a room occupied as a night-nursery by a nurse, and three children of the ages of 12, 8, and 6 years? How would you, by natural means, safely ventilate it? How would you accurately estimate its dimensions?

77a/c

UNIVERSITY OF NEW ZEALAND.

EXAMINATION PAPERS, 1885.

LONDON:
PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.
1885.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION PAPERS, 1885.

LONDON:
PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.
1885.

LIBRARY
OF THE
LELAND STANFORD JUNIOR
UNIVERSITY.

A5566

ALERE FLAMMAM.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

IVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

LATIN LANGUAGE AND LITERATURE.

xaminer: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

Translate :—

ENCE: Heautont. 275-284.

Ubi ventum ad aedis est, Dromo pultat fores;
Anus quaedam prodit; haec ubi aperit ostium,
Continuo hic se coniecit intro, ego consequor;
Anus foribus obdit pessulum, ad lanam redit.
Hic sciri potuit aut nusquam alibi, Clinia,
Quo studio vitam suam te absente exegerit,
Ubi de improvisost interventum mulieri.
Nam ea res dedit tum existumandi copiam
Cottidianae vitae consuetudinem,
Quae quoiusque ingenium ut sit declarat maxume.

Explain the construction of the first line. When is such
truction used?

ive the derivation of *pultat*, and quote similar instances.

II. *Translate* :—

Terence : Adelph. 556–565.

De. Quid ille gannit? quid volt? quid aïs, bone vir? est frater
domi?
Sy. Quid, malum, 'bone vir' mihi narras? equidem perii.
De. Quid tibist?
Sy. Rogitas? Ctesipho me pugnis miserum et istam psaltriam
Usque occidit. De. Hem, quid narras? Sy. Em, vide
ut discidit labrum.
De. Quam ob rem? Sy. Me impulsore hanc emptam esse
De. Non tu eum rus hinc modo
Produxe aibas? Sy. Factum; verum venit post insanie
Nil pepercit. Non puduisse verberare hominem senem
Quem ego modo puerum tantillum in manibus ges
meis.
De. Laudo: Ctesipho, patrissas: abi, virum te iudico.
Sy. Laudas? ne ille continebit posthac, si sapiet, manus.

1. Account for the mood of *discidit*. What is the quan of the penultimate syllable? How is this determined? S the line in which it occurs.

2. Explain the formation of *produxe* and of *patrissas*; the construction of *malum* and *puduisse*. When is *pa* followed by an accusative?

3. Point out any quantity in the above passage which would not have been admitted in Vergil or Horace.

III. *Translate* :—

Tacitus : Agric. c. xix.

Ceterum animorum provinciae prudens, simulque doctus per aliena experimenta, parum profici armis, si iniuriae sequerentur, caussas bellorum statuit excidere. A se suisque orsus, primam domum suam coercuit; quod plerisque haud minus arduum est, quam provinciam regere. Nihil per libertos servosque publicae rei; non studiis privatis nec ex commendatione aut precibus centurionum milites adsciscere, sed optimum quemque fidelissimum putare: omnia scire, non omnia exsequi: par-

ris peccatis veniam, magnis severitatem commodare: nec poena
emper, sed saepius poenitentia contentus esse: officiis et ad-
ninistrationibus potius non peccaturos praeponere, quam dam-
are, cum peccassent. Frumenti et tributorum exactionem
equalitate munerum mollire, circumcisis, quae in quaestum
eperta ipso tributo gravius tolerabantur. Namque per ludi-
rium adsidere clausis horreis, et emere ultro frumenta, ac ven-
ere pretio cogebantur. Devortia itinerum et longinquitas re-
ionum indicebatur, ut civitates a proximis hibernis in remota
t avia deferrent, donec, quod omnibus in promptu erat, paucis
crosum fieret.

1. Date the chief events in the life of Agricola.

2. *Translate with comments*—

(*a*) Prima castrorum rudimenta Suetonio Paulino approbavit electus quem contubernio aestimaret.

(*b*) Ludos et inania honoris medio rationis atque abundantiae duxit.

(*c*) Contractisque legionum vexillis ipse ante agmen erexit aciem.

(*d*) Formam totius Britanniae auctores oblongae scutulae vel bipenni assimilavere.

IV. *Translate*:—

TACITUS: Germ. c. xvi.

Ne caementorum quidem apud illos aut tegularum usus: materia ad omnia utuntur informi et citra speciem aut delectationem. Quaedam loca diligentius inlinunt terra, ita pura ac splendente, ut picturam ac lineamenta colorum imitetur. Solent et subterraneos specus aperire, eosque multo insuper fimo onerant, suffugium hiemi et receptaculum frugibus, quia rigorem frigorum eiusmodi locis molliunt: et, si quando hostis advenit, aperta populatur, abdita autem et defossa aut ignorantur, aut eo ipso fallunt, quod quaerenda sunt.

1. Distinguish *lacertus* and *bracchium*; *lancea* and *hasta*; *cuneus* and *turma*; *gens* and *natio*.

2. Explain the terms *decumates agri, limes, collationes, s*
tentrio.

3. Define the position of Varini, Chatti, Mattiaci, Bruct
Where was the *Saltus Hercynius* ?

V. *Translate the following passages not previously prescribe*

CICERO : Pro Sestio, § 86.

[*Candidates presenting the Terence are not expected*
attempt both of these passages.]

Et tu hoc loco laudas Milonem et iure laudas. Quem e
umquam virum tam immortali virtute vidimus ? qui nullo p
mio proposito praeter hoc, quod iam contritum et contempt
putatur, iudicium bonorum, omnia pericula, summos labo
gravissimas contentiones inimicitiasque suscepit ? qui mihi u
ex omnibus civibus videtur re docuisse, non verbis, et q
oporteret a praestantissimis viris in re publica fieri et q
necesse esset : oportere hominum audacium, eversorum rei p
licae sceleri legibus et iudiciis resistere : si leges non valer
iudicia non essent, si res publica vi consensuque audacium ar
oppressa teneretur, praesidio et copiis defendi vitam et libe
tem necesse esse. Hoc sentire prudentiae est, facere fortitu
nis, et sentire vero et facere perfectae cumulataeque virtutis.

OVID : Trist. v. 5. 5–12.

Lingua favens adsit, nostrorum oblita malorum,
  Quae, puto, dedidicit iam bona verba loqui.
Quaeque semel toto vestis mihi sumitur anno,
  Sumatur fatis discolor alba meis.
Araque gramineo viridis de cespite fiat,
  Et velet tepidos nexa corona focos.
Da mihi tura, puer, pingues facientia flammas,
  Quodque pio fusum stridat in igne, merum.

IVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

LATIN LANGUAGE AND LITERATURE.

xaminer: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *b*.

ranslate into Latin:—

I. Manlius, the preserver of the Capitol from the Gauls, was ous of the high reputation of Camillus, and alienated from patricians generally, because his share of the high offices of commonwealth was not such as his merits claimed. Thus was ready to feel indignant at the severities practised against debtors; and his better feelings also, the loftiness of his ure, and his sympathy with brave men, were all shocked by the nes which he daily witnessed. One day he saw a centurion who l served with him, and whom he knew to be a distinguished lier, now dragged through the market-place on his way to his ditor's workhouse. He hastened up, protested against the ignity, himself paid the debt upon the spot, and redeemed debtor. The gratitude and popularity, which this act won him, excited him to go on in the same course: he sold by blic auction the most valuable part of his landed property, d declared that he would never see a fellow-citizen made a ndsman for debt, so long as he had the means of relieving him.

Questions on Grammar arising out of the prescribed books:—

1. Give the full parsing of *misceto, demulceam, cĕdo, obtririt, orsus, coeperet*.

[*Turn over.*

2. Derive *sublime, commeatus, seditio, provincia, aestus, con* *vicium.*

3. State the reason for the mood and tense of the words i italics in

- (*a*) quid cum illis *agas,* qui neque ius neque bonum atq aequom sciunt?
- (*b*) nam quod de argento *sperem* aut posse *postulem* fallere, nil est.
- (*c*) potius quam *venias* in periclum, Sannio, *servesne* an *perdas* totum, dividuom face.
- (*d*) aleam, quod *mirere,* sobrii inter seria exercent.

and for the case of the words in italics in

- (*e*) ubi me dixero dare *tanti,* testis faciet ilico.
- (*f*) quapropter quoquo *pacto tacito* est opus. a, minim *gentium.*
- (*g*) minus *triennium* in ea legatione detentus est.
- (*h*) Britanni adhuc *pugnae* expertes summa collium insed rant.

4. Mention any points in which the syntax of Terence *or* Tacitus differs from that of Cicero.

III. *General Questions on Grammar* :—

1. Translate into Latin :—

- (*a*) He said that he had never been dissatisfied with soldiers.
- (*b*) Can I trust any one, now that my own brother has deceived me?
- (*c*) Are we to put up with this, or tell it to some one w may help us?
- (*d*) It is hard to say whether deliberation or prompt acti is the more needful.

2. Show by examples the force of each tense of the indicat and subjunctive when preceded by *si.*

3. Write down the cardinals, ordinals, and numeral adverbs l longing to 4, 8, 15, 30, 200, 500.

4. Give the gender and the genitive plural of *mus, cr* *vellus, pirus, verres, limes, palmes, merces.*

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

I. *Translate into English*:—

(A.) Aristophanes: Knights.

(*a*) 303–321.

ΧΟΡ. *Ὦ μιαρέ, καὶ βδελυρέ, καὶ κατακε-*
κράκτα, τοῦ σοῦ θράσους
πᾶσα μὲν γῆ πλέα,
πᾶσα δ’ ἐκκλησία,
καὶ τέλη, καὶ γραφαί,
καὶ δικαστήρι’, ὦ
βορβοροτάραξι, καὶ
τὴν πόλιν ἅπασαν ἡ-
μῶν ἀνατετυρβακώς,
ὅστις ἡμῶν τὰς Ἀθήνας ἐκκεκώφηκας βοῶν,
κἀπὸ τῶν πετρῶν ἄνωθεν τοὺς πόρους θυννοσκοπῶν.
ΚΛΕΩΝ. *οἶδ’ ἐγὼ τὸ πρᾶγμα τοῦθ’, ὅθεν πάλαι καττύεται.*
ΑΛΛΑΝ. *εἰ δὲ μὴ σύ γ’ οἶσθα κάττυμ’, οὐδ’ ἐγὼ χορδεύματα,*
ὅστις ὑποτέμνων ἐπώλεις δέρμα μοχθηροῦ βοὸς
τοῖς ἀγροίκοισιν πανούργως, ὥστε φαίνεσθαι παχύ,
καὶ πρὶν ἡμέραν φορῆσαι, μεῖζον ἦν δυοῖν δοχμαῖν.
ΟΙΚ. Α. *καί, νὴ Δία, με τοῦτ’ ἔδρασε ταυτόν, ὥστε κατάγελων*
πάμπολυν τοῖς δημόταις καὶ τοῖς φίλοις παρασχέθειν.
πρὶν γὰρ εἶναι Περγασῆσιν, ἔνεον ἐν ταῖς ἐμβάσιν.

(*b*) 691–709.

ΑΛΛΑΝ. καὶ μὴν ὁ Παφλαγὼν οὑτοσὶ προσέρχεται,
ὠθῶν κολόκυμα, καὶ ταράττων, καὶ κυκῶν,
ὡς δὴ καταπιόμενός με. μορμὼ τοῦ θράσους.
ΚΛΕΩΝ. εἰ μή σ' ἀπολέσαιμ', εἴ τι τῶν αὐτῶν ἐμοὶ
ψευδῶν ἐνείη, διαπέσοιμι πανταχῇ.
ΑΛΛΑΝ. ἥσθην ἀπειλαῖς, ἐγέλασα ψολοκομπίαις,
ἀπεπυδάρισα μόθωνα, περιεκόκκυσα.
ΚΛΕΩΝ. οὔ τοι, μὰ τὴν Δήμητρα γ', ἢν μή σ' ἐκφάγω
ἐκ τῆσδε τῆς γῆς, οὐδέποτε βιώσομαι.
ΑΛΛΑΝ. ἢν μὴ 'κφάγῃς; ἐγὼ δέ, σ' ἢν μή γ' ἐκπίω,
κἀπεκροφήσας αὐτὸς ἐπιδιαῤῥαγῶ.
ΚΛΕΩΝ. ἀπολῶ σε, νὴ τὴν προεδρίαν τὴν ἐκ Πύλου.
ΑΛΛΑΝ. ἰδοὺ προεδρίαν· οἷον ὄψομαί σ' ἐγὼ
ἐκ τῆς προεδρίας ἔσχατον θεώμενον.
ΚΛΕΩΝ. ἐν τῷ ξύλῳ δήσω σε, νὴ τὸν οὐρανόν.
ΑΛΛΑΝ. ὡς ὀξύθυμος. φέρε, τί σοι δῶ καταφαγεῖν;
ἐπὶ τῷ φάγοις ἥδιστ' ἄν; ἐπὶ βαλαντίῳ;
ΚΛΕΩΝ. ἐξαρπάσομαί σου τοῖς ὄνυξι τἄντερα.
ΑΛΛΑΝ. ἀπονυχιῶ σου τἀν Πρυτανείῳ σιτία.

(B.) XENOPHON : Memorabilia.

(*a*) I. c. 4, § 13.

Οὐ τοίνυν μόνον ἤρκεσε τῷ θεῷ τοῦ σώματος ἐπιμεληθῆναι, ἀλλ' ὅπερ μέγιστόν ἐστι, καὶ τὴν ψυχὴν κρατίστην τῷ ἀνθρώπῳ ἐνέφυσε. τίνος γὰρ ἄλλου ζῴου ψυχὴ πρῶτα μὲν θεῶν τῶν τὰ μέγιστα καὶ κάλλιστα συνταξάντων ᾔσθηται ὅτι εἰσί; τί δὲ φῦλον ἄλλο ἢ ἄνθρωποι θεοὺς θεραπεύουσι; ποία δὲ ψυχὴ τῆς ἀνθρωπίνης ἱκανωτέρα προφυλάττεσθαι ἢ λιμὸν ἢ δίψος ἢ ψύχη ἢ θάλπη, ἢ νόσοις ἐπικουρῆσαι, ἢ ῥώμην ἀσκῆσαι, ἢ πρὸς μάθησιν ἐκπονῆσαι, ἢ ὅσα ἂν ἀκούσῃ ἢ ἴδῃ ἢ μάθῃ ἱκανωτέρα ἐστὶ διαμεμνῆσθαι; οὐ γὰρ πάνυ σοι κατάδηλον ὅτι παρὰ τἄλλα ζῷα ὥσπερ θεοὶ ἄνθρωποι βιοτεύουσι, φύσει καὶ τῷ σώματι καὶ τῇ ψυχῇ κρατιστεύοντες;

(*b*) II. c. 1, § 24.

Πρῶτον μὲν γὰρ οὐ πολέμων οὐδὲ πραγμάτων φροντιεῖς, ἀλλὰ σκοπούμενος διοίσει τί ἂν κεχαρισμένον ἢ σιτίον ἢ ποτὸν εὕροις, ἢ τί ἂν ἰδὼν ἢ ἀκούσας τερφθείης, ἢ τίνων ἂν ὀσφραινόμενος ἢ

όμενος ησθείης, καὶ πῶς ἂν μαλακώτατα καθεύδοις, καὶ πῶς πονώτατα τούτων πάντων τυγχάνοις. ἐὰν δέ ποτε γένηταί ὑποψία σπάνεως ἀφ' ὧν ἔσται ταῦτα, οὐ φόβος μή σε γω ἐπὶ τὸ πονοῦντα καὶ ταλαιπωροῦντα τῳ σώματι καὶ τῇ χῇ ταῦτα πορίζεσθαι, ἀλλ' οἷς ἂν οἱ ἄλλοι ἐργάζωνται, τοις σὺ χρήσει, οὐδενὸς ἀπεχόμενος ὅθεν ἂν δυνατὸν ᾖ τι δᾶναι. πανταχόθεν γὰρ ὠφελεῖσθαι τοῖς ἐμοὶ συνοῦσιν υσίαν ἐγὼ παρέχω.

1. What reason is there for identifying the two *οἰκέται* of Knights with Nikias and Demosthenes?

2. What were the sources of the public revenue of Athens?

3. Explain the terms *προεδρία, πρυτάνεις, παράβασις, υφόρας*.

4. Describe the position of Prodikus, Antisthenes, and istippus in the history of Greek thought.

5. Give some account of the trial of Sokrates.

6. Which of his predecessors in comedy does Aristophanes ntion in the Knights? How does he speak of them?

Translate into English, from books not prescribed:—

A.) Thucydides, Book IV. chap. 28.

O δὲ Νικίας τῶν τε Ἀθηναίων τι ὑποθορυβησάντων ἐς τὸν έωνα, ὅτι οὐ καὶ νῦν πλέει, εἰ ῥᾴδιόν γε αὐτῷ φαίνεται, καὶ ὁρῶν αὐτὸν ἐπιτιμῶντα, ἐκέλευεν ἥν τινα βούλεται δύναμιν όντα τὸ ἐπὶ σφᾶς εἶναι ἐπιχειρεῖν. ὁ δὲ τὸ μὲν πρῶτον ενος αὐτὸν λόγῳ μόνον ἀφιέναι ἑτοῖμος ἦν, γνοὺς δὲ τῷ παραδωσείοντα ἀνεχώρει, καὶ οὐκ ἔφη αὐτὸς ἀλλ' ἐκεῖνον ατηγεῖν, δεδιὼς ἤδη καὶ οὐκ ἂν οἰόμενός οἱ αὐτὸν τολμῆσαι χωρῆσαι· αὖθις δὲ ὁ Νικίας ἐκέλευε, καὶ ἐξίστατο τῆς ἐπὶ φ ἀρχῆς, καὶ μάρτυρας τοὺς Ἀθηναίους ἐποιεῖτο. οἱ δὲ,

οἷον ὄχλος φιλεῖ ποιεῖν, ὅσῳ μᾶλλον ὁ Κλέων ὑπέφευγε τὸν πλοῦν καὶ ἐξανεχώρει τὰ εἰρημένα, τόσῳ ἐπεκελεύοντο τῷ Νικίᾳ παραδιδόναι τὴν ἀρχὴν καὶ ἐκείνῳ ἐπεβόων πλεῖν.

(B.) Euripides : Medea, 1040–1055.

Φεῦ φεῦ· τί προσδέρκεσθέ μ᾽ ὄμμασιν, τέκνα;
τί προσγελᾶτε τὸν πανύστατον γέλων;
αἰαῖ· τί δράσω; καρδία γὰρ οἴχεται,
γυναῖκες, ὄμμα φαιδρὸν ὡς εἶδον τέκνων.
οὐκ ἂν δυναίμην· χαιρέτω βουλεύματα
τὰ πρόσθεν· ἄξω παῖδας ἐκ γαίας ἐμούς.
τί δεῖ με πατέρα τῶνδε τοῖς τούτων κακοῖς
λυποῦσαν αὐτὴν δὶς τόσα κτᾶσθαι κακά;
οὐ δῆτ᾽ ἔγωγε. χαιρέτω βουλεύματα.
καίτοι τί πάσχω; βούλομαι γέλωτ᾽ ὀφλεῖν
ἐχθροὺς μεθεῖσα τοὺς ἐμοὺς ἀζημίους;
τολμητέον τάδ᾽. ἀλλὰ τῆς ἐμῆς κάκης,
τὸ καὶ προέσθαι μαλθακοὺς λόγους φρενί.
χωρεῖτε παῖδες ἐς δόμους· ὅτῳ δὲ μὴ
θέμις παρεῖναι τοῖς ἐμοῖσι θύμασιν,
αὐτῷ μελήσει· χεῖρα δ᾽ οὐ διαφθερῶ.

IVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GREEK LANGUAGE AND LITERATURE.

xaminer: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *b*.

***Translate into Greek, with accents*:—**

hemistocles, aware of their suspicions, desired them not be misled by reports, but to send to Athens men whom y could trust out of their own numbers, who would see themselves and bring back word. They agreed; and he he same time privately instructed the Athenians to detain envoys as quietly as they could, and not let them go until and his colleagues had got safely home. For he was id that the Lacedæmonians, when they heard the truth, ht not allow them to return. So the Athenians detained envoys; and Themistocles, coming before the Lacedæ-ians at length, declared in so many words that Athens now provided with walls, and could protect her citizens; ceforward if the Lacedæmonians or their allies wished at time to negotiate they must deal with the Athenians as men who knew quite well what was for their own and common good.

***Questions in Grammar arising out of the prescribed books*:—**

Give the parsing of the following words, adding the

[*Turn over.*

κόπτου.

(δ) πολλοῦ δὲ πολύν με χρόνον καὶ νῦν ἐλελήθης ἐγ
φιάζων.

3. Distinguish ὠμός and ὦμος, φορῆσαι and φορῆ
φίλει and φιλεῖ, ἀπεκρύψω and ἀποκρύψω.

4. Give the derivation and meaning of βλίττω, ἀφεκ
δυσξύμβολος, ἠπίστω, διαβολή, ἀφελής.

III. *General Questions in Grammar* :—

1. Give the genitive singular and dative plural of ἠ
φλέψ, θρίξ, πατήρ, παῖς, ἠχώ, and the full inflexion of τέ
νεώς, and γραῦς.

2. Write out the imperative present of εἰμί, εἶμι, and ἵ

3. Write out the present optative of ἵστημι and φιλέω.

4. Translate :—ἐκπεμφθεὶς γὰρ ἐπὶ τῶν τετρακοσίων
τὰς νήσους, ἐπ᾽ ἄλλῃ ἄλλην κατεστρέφετο· ἔπειτα δὲ ἐπ᾽ οἱ
ἔπλευσε.

5. What constructions follow ἐγγύς, εὐθύ, ὕστερος, φθον
δεῖ, μέλει?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: Prof. Henry Morley, LL.D.

Paper *a*.

English Language:—More's 'Utopia;' Bacon's 'New Atlantis;' Spenser's 'Faerie Queene,' Books I. and II.

1. Write a note or two upon the manner in which phonetic hanges are now studied for elucidation of the history of anguage. Account for the *d* in "thunder," and the *b* in "humble."

2. Discuss the origin and structure of the English alphabet.

3. From which of the elements that join to form English s each of the following words derived:—*mop, pail, hustings, street, preach, clerk, cherry, venison, summons, sausage, legal, loyal, renegade, serenade, yacht, alchemy, chess, cherub, tattoo, potato.*

4. Make a list of the chief Teutonic suffixes of the English nouns, and explain their origin and force.

5. Tell all that you know of the history of the third personal pronoun, *he*, *she*, *it*. How far is it to be called personal?

6. Distinguish between weak and strong verbs. Write a few notes on the origin and history of what is called the strong form of conjugation.

7. Analyse this sentence :—

"The wind had no more strength than this,
That leisurely it blew,
To make one leaf the next to kiss
That closely by it grew."

8. When, where, and why did Sir Thomas More write his 'Utopia'? Why was it in Latin? When did it first appear in English?

9. Give some evidences of the relation of More's 'Utopia' to the state of England and of Europe in the time when it was written.

10. Why is the 'New Atlantis' so called? Tell in a few words the substance of the story, and show its relation to the life of Francis Bacon.

11. When did Spenser publish the first three books of the 'Faerie Queene'? What was the aim of the first book? Tell the story of Una and the Lion. What do you suppose to be figured by that part of the allegory?

12. "And is there care in heaven? and is there love
In heavenly spirits to these creature base
That may compassion of their evils move?"

Tell the incident in the second book of the Faerie Queene with which this passage is associated.

13. Describe the structure of the verse of a Spenserian stanza.

14. Explain the italicised words in the following sentences :—" I *nill* thine offered grace;" "For they be two the *prowest* knights on ground;" "waves . . . *engrossed* with mud, which did them foul *agrise*." "But safe I have them kept in secret *mew*." "The rueful *strich* still waiting on the bier."

NIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

ENGLISH LANGUAGE AND LITERATURE.

PAPER *b*. English Literature from 1790 to 1825.

Examiner: Prof. Henry Morley, LL.D.

1. Describe the views taken by Edmund Burke of the French volution, with especial reference to his 'Reflections on the volution in France,' published in 1790.

2. What was Wordsworth's age in the year 1790? Give ne account of his life from that year to the date of the publi-on of the 'Lyrical Ballads.'

. What was Walter Scott's age in the year 1790? Give e account of his life from that date to the year 1805.

. What was Byron's age in the year 1790? What caused to write 'English Bards and Scotch Reviewers'?

. Give some account of the origin of 'The Edinburgh iew' and of 'The Quarterly Review.'

. When did Byron publish the first two cantos of 'Childe old'? Account for their great success. What poems of on's followed within the next two years?

[*Turn over.*

7. Sketch the literary life of Walter Scott from 1805 to the date of the publishing of 'Waverley.'

8. Show how the movement of thought, of which the French Revolution was one sign, affected the relation of women to our higher Literature. Add some account of the writings of Miss Edgeworth and Jane Austen.

9. Give the names of the most important of Shelley's poems with the dates of their publication, and describe any one of them.

10. Write a few notes upon the life of John Keats and the chief characteristics of his poetry.

11. Name the author of each of the following works, giving, as nearly as you can, its date, and a note or two upon its character:—'The Pleasures of Memory,' 'The Pleasures of Hope,' 'The Life of Leo X.,' 'The Parish Register,' 'Curiosities of Literature,' 'Lalla Rookh,' 'The Essays of Elia.'

12. Indicate some of the chief differences in tone and character between our Literature in the year 1790 and our Literature in the year 1825.

NIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

FRENCH.

Examiner: Rev. P. H. Ernest Brette, B.D.

PAPER *a*.

Grammar, Translation, and Composition.

Grammar.

B. *Candidates must answer* four *questions only, and they may select any four in the following list.*)

1. Give, and account for, the gender of the following sub-
ntives:—*aimant, antre, biscuit, cœur, cour, cours, feuille,*
rte, pomme, foi, foie, fois, couleur, honneur, image, ouvrage.

2. Correct, and turn into English:—
   - (*a*) Les haut montagnes sont couvert de neiges éternel.
   - (*b*) Les étoffes bleu sont sujet à pâlir à l'air.
   - (*c*) La soie naturel est toujours blanc ou jaune.
   - (*d*) Que nos mœurs privé et public soient toujours pur et doux.
   - (*e*) Jésus pardonna à deux femmes pécheur et repentant.
   - (*f*) Les pyramides égyptien sont des monuments colossal.
   - (*g*) J'ai fait une bon récolte; le tien est mauvais.

Expound the rules concerning *tout* (*adjective* and *ad-*
b), and illustrate them by translating
   - (*a*) into English:—" nous sommes *tous* prêts à sortir "—" nous sommes *tout* prêts à sortir "—" de *toute* autre manière "—" d'une *tout* autre manière ";
   - (*b*) into French:—" your sister was *quite* frightened "—" the little girl was *quite* ashamed "—" this lady is *quite* beautiful and *quite* affable."

4. (*a*) Conjugate the Indicative pluperfect and Imperative of—*acquérir*—*se rappeler*—*se souvenir*—*s'en aller*.

(*b*) Explain the discrepancy between the English verb "to attend" and the French "attendre"; and translate:—(*a*) attend to me; (*b*) the Emperor was attended by a brilliant staff; (*c*) we attend lectures on chemistry; (*d*) nurses attend the sick in the hospitals; (*e*) attend to your business.

5. How do you render into French the English auxiliary verbs *to have, to be, to get, to do, ought, must, will, should, would* in the following sentences:—

(*a*) *Had* you worked better, you would have succeeded.
(*b*) *Had* it not been for you, I should have been drowned.
(*c*) We *are* to start at noon.
(*d*) We *are* to do what we are told.
(*e*) *Get* your boots cleaned.
(*f*) You *ought* to do your translation.
(*g*) I *must* finish my exercise before eleven o'clock.
(*h*) If you *will* succeed, you *must* work.
(*i*) *Do* you understand what I mean? I *do*.
(*j*) *Should* my friend come, tell him to wait for me.
(*k*) You *should* obey the orders you have received.

6. In how many ways is the English passive construction avoided in French? Translate, as examples:—

(*a*) *We have been told* by a friend of yours that you were ill.
(*b*) *We have been forbidden* to go out.
(*c*) This book *is sold* at all booksellers'.
(*d*) How *is* this word *pronounced*?
(*e*) *It has been reported* that the general was killed.
(*f*) *You have been misinformed.*
(*g*) *I am not pleased* with this pupil.

B. Translation.

Translate into English:—

Toute ville au moyen âge, et, jusqu'à Louis XII, toute ville de France avait ses lieux d'asile. Ces lieux d'asile, au milieu du déluge de lois pénales et de juridictions barbares qui inondaient la cité, étaient des espèces d'îles qui s'élevaient au-dessus du niveau de la justice humaine. Tout criminel qui y abordait était sauvé. Il y avait dans une banlieue presque autant de lieux d'asile que de lieux patibulaires. C'était l'abus de l'impunité à côté de l'abus des supplices,

deux choses mauvaises qui tâchaient de se corriger l'une par l'autre. Les palais du roi, les hôtels des princes, les églises surtout, avaient droit d'asile. Quelquefois d'une ville tout entière qu'on avait besoin de repeupler on faisait temporairement un lieu de refuge. Louis XI fit Paris asile en 1467.

Une fois le pied dans l'asile, le criminel était sacré; mais il fallait qu'il se gardât d'en sortir: un pas hors du sanctuaire, il retombait dans le flot. La roue, le gibet, l'estrapade faisaient bonne garde à l'entour du lieu de refuge, et guettaient sans cesse leur proie comme les requins autour du vaisseau. On a vu des condamnés qui blanchissaient ainsi dans un cloître, sur l'escalier d'un palais, dans la culture d'une abbaye, sous un porche d'église; de cette façon, l'asile était une prison comme une autre.—VICTOR HUGO.

C. Composition.

Translate into French:—

. . . . The great peculiarity of Victor Hugo is that his poetry always transports. No one who cares for poetry at all, and who has mastered the preliminary necessity of acquaintance with the French language and French prosody, can read any of his better works without gradually rising to a condition of enthusiasm in which the possible defects of the matter are altogether lost sight of in the unsurpassed and dazzling excellence of the manner. This is the special test of poetry, and there is none other. The technical means by which Victor Hugo produces these effects consist in a mastery of varied versification, in an extraordinary command of pictorial language, dealing at once with physical and mental phenomena, and, above all, in a certain irresistible habit of never allowing the iron to grow cold. Stroke follows stroke in the exciting and transporting process in a manner not easily paralleled in other writers.

Other poets are often best exhibited by very short extracts, by jewels five words long. This is not so with Victor Hugo. He has such jewels, but they are not his chief titles to admiration. The ardour and flow, as of molten metal, which characterise him are felt only in the mass, and must be sought there. . . . His unequalled versification is a weapon which he cannot exchange for the less pointed tool of prose without losing much of his power. His defects emerge as his merits subside. But taking him altogether, it may be asserted, without the least fear of contradiction, that Victor Hugo will hold to all posterity the position of the greatest poet and of one of the greatest prose writers of France.—GEORGE SAINTSBURY.

NIVERSITY OF NEW ZEALAND

B.A. PASS EXAMINATION, 1885.

FRENCH.

Examiner: Rev. P. H. ERNEST BRETTE, B.D.

PAPER *b*.

LITTÉRATURE ET TRADUCTION.

Littérature :—

N.B. *Ne répondez qu'à* quatre *des questions suivantes.*)

. Ecrivez une étude sur les travaux historiques de Voltaire.

2. Vinet a défini l'épopée "l'explication de la terre par le ciel." — Appréciez à ce point de vue *la Henriade*.

3. Voltaire se fit poète épique, "parce que personne en France," disait-on, "ne l'avait été encore." Cette opinion était vraie avant *la Henriade*; le fut-elle encore après, oui ou non ? Et pourquoi ?

4. Faites l'analyse critique d'une des tragédies suivantes de Voltaire :—'Mérope,' 'Mahomet,' 'Tancrède,' 'Zaïre.'

5. Ecrivez une courte notice sur un des écrivains suivants :—Diderot, d'Alembert, Fontenelle, Rollin, Gresset.

6. Faites une étude sur les œuvres dramatiques de Beaumarchais.

7. Décrivez à grands traits l'influence exercée par les œuvres de Jean-Jacques Rousseau sur la seconde moitié du xviii^e siècle.

B. Traduisez en anglais :—

1. *Bataille de Narva.*

. . . Le signal était deux fusées, et le mot, en allemand, *"Avec l'aide de Dieu !"* Un officier général ayant représenté au roi la grandeur du péril : " Quoi ! vous doutez," dit-il, " qu'avec mes huit mille braves Suédois je ne passe pas sur le corps à quatre-vingt mille Moscovites ?" Un moment après, craignant qu'il n'y eût eu un peu de fanfaronnade dans ses paroles, il courut lui-même après cet officier : " N'êtes-vous pas de mon avis ?" lui dit-il ; " n'ai-je pas deux avantages sur les ennemis ? l'un, que leur cavalerie ne pourra leur servir ; et l'autre que le lieu étant resserré, leur grand nombre ne fera que les incommoder ; et ainsi je serai réellement plus fort qu'eux." L'officier n'eut garde d'être d'un autre avis, et on marcha aux Moscovites à midi, le 30 Novembre 1700.

VOLTAIRE, *Histoire de Charles XII.*

2. *Henri IV après la Bataille d'Ivry.*

Henri victorieux voyait de tous côtés
Les ligueurs sans défense implorant ses bontés . . .
Ses soldats près de lui, d'un œil plein de courroux,
Regardaient ces vaincus échappés à leurs coups.
Les captifs en tremblant, conduits en sa présence,
Attendaient leur arrêt dans un profond silence . . .

" Soyez libres," dit-il ; " vous pouvez désormais
Rester mes ennemis, ou vivre mes sujets.
Entre Mayenne et moi reconnaissez un maître ;
Voyez qui de nous deux a mérité de l'être :
Esclaves de la ligue, ou compagnons d'un roi,
Allez gémir sous elle, ou triomphez sous moi :
Choisissez." A ces mots d'un roi couvert de gloire,
Sur un champ de bataille, au sein de la victoire,
On voit en un moment ces captifs éperdus,
Contents de leur défaite, heureux d'être vaincus :
Leurs yeux sont éclairés, leurs cœurs n'ont plus de haine ;
Sa valeur les vainquit, sa vertu les enchaîne ;
Et s'honorant déjà du nom de ses soldats,
Pour expier leur crime, ils marchent sur ses pas.

VOLTAIRE, *La Henriade, Chant VIII.*

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GERMAN.

Examiner: Prof. C. A. Buchheim, Ph.D., F.C.P.

PAPER *a*.

I. *Translate into English*:—

Leſſings „Nathan der Weiſe."

(*a*) Was ſprichſt du da nun wieder, liebe Daja!
Du haſt doch wahrlich deine ſonderbaren
Begriffe! „Sein, ſein Gott! für den er kämpft!"
Wem eignet Gott? Was iſt das für ein Gott,
Der einem Menſchen eignet? Der für ſich
Muß kämpfen laſſen?—Und wie weiß
Man denn, für welchen Erdkloß man geboren,
Wenn man's für den nicht iſt, auf welchem man
Geboren?—Wenn mein Vater dich ſo hörte!—
Was that er dir, mir immer nur mein Glück
So weit von ihm als möglich vorzuſpiegeln?
Was that er dir, den Samen der Vernunft,
Den er ſo rein in meine Seele ſtreute,
Mit deines Landes Unkraut oder Blumen
So gern zu miſchen?

(*b*) Doch nun kam die Vernunft allmählich wieder,
Sie ſprach mit ſanfter Stimm': „Und doch iſt Gott!
Doch war auch Gottes Rathſchluß das! Wohlan!

Komm! übe, was du längſt begriffen haſt;
Was ſicherlich zu üben ſchwerer nicht,
Als zu begreifen iſt, wenn du nur willſt.
Steh' auf!"—Ich ſtand auf und rief zu Gott: Ich will!
Willſt du nur, daß ich will!

Leſſings „Minna von Barnhelm."

(*c*) Sie nennen mich Tellheim; der Name trifft ein. Aber Sie meinen, ich ſei der Tellheim, den Sie in Ihrem Vaterlande gekannt haben, der blühende Mann, voller Anſprüche, voller Ruhmbegierde; der ſeines ganzen Körpers, ſeiner ganzen Seele mächtig war; vor dem die Schranken der Ehre und des Glücks eröffnet ſtanden! der Ihres Herzens und Ihrer Hand, wenn er ſchon Ihrer noch nicht würdig war, täglich würdiger zu werden hoffen durfte. Dieſer Tellheim bin ich ebenſo wenig — als ich mein Vater bin. Beide ſind geweſen. Ich bin Tellheim, der verabſchiedete, der an ſeiner Ehre gekränkte, der Krüppel, der Bettler.

Gellerts „Fabeln."

(*d*) Der Arme und das Glück.

Ein armer Mann, verſehn zum Graben,
Wollt' jetzt ein beſſer Schickſal haben,
Und rief das Glück um Beiſtand an.
Das Glück erhörte ſein Verlangen.
Er fand, indem er grub, zwei ſtarke goldne Stangen;
Allein der ungeſchickte Mann
Sah ſie für altes Meſſing an,
Und gab für wenig Geld den Reichthum aus den Händen,
Fuhr fort und bat das Glück, doch mehr ihm zuzuwenden.

O Thor! rief ihm die Gottheit zu,
Was quälſt du mich, dich zu beglücken?
Wer wäre glücklicher als du,
Wenn du gewußt, dich in dein Glück zu ſchicken?

II. **Translate and explain** the following phrases occurring in „Nathan der Weiſe“ (*a*); and translate and give the etymology of the following expressions occurring in „Minna von Barnhelm“ (*b*):—

(*a*) Kein Menſch muß müſſen. — Mit Stumpf und Stiel vertilgen. — Selbzwanziger gefangen. — Jemand den Garaus machen. — Sein Packet wagen. — Es ward mir nicht vor der Wiege geſungen. — Nur muß der Knorr den Knubben hübſch vertragen.

(*b*) Vermaledein. — Equipage. — Schulzengericht. — Naſeweis. — Futteral. — Garderobe. — Kantine.

III. *Grammatical Questions*:—

1. Give the rules, with examples, for the formation of the plural of (*a*) German nouns, (*b*) substantives borrowed from the ancient or modern foreign languages and employed in German.

2. Decline the relative pronouns wer, was, der, and welcher; and state their uses. In what instances must we use the respective forms of der instead of those of welcher?

3. Give the rules, illustrated by examples, for the conjugation of compound verbs. Mention some verbs which, according to their meaning, may be used either as separable or inseparable compound verbs.

4. Explain the use of the passive voice in German. Is there an instance in which also intransitive verbs may be used passively? Give examples.

5. Show by examples what cases are governed by the following prepositions:—durch, vor, für, ſtatt, außer, zwiſchen.

6. Illustrate, by means of a tabular view and examples, the order of words in German (*a*) in direct principal sentences, (*b*) in inverted principal sentences, (*c*) in dependent sentences.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GERMAN.

Examiner: Prof. C. A. Buchheim, Ph.D., F.C.P.

PAPER *b*.

I. *Unprepared Translation and Composition.*

1. Translate into English :—

Schon ſeit längerer Zeit irrte ein unſtetes Volk an den nördlichen Grenzen der, zu beiden Seiten der Donau, von den Kelten eingenommenen Landſchaft. Sie nannten ſich die Kimbrer, das heißt die „Kämpfer," oder, wie ihre Feinde es überſetzten, die Räuber, welche Benennung indeß ſchon vor ihrem Auszug, allem Anſchein nach, Volksname geworden war. Sie kamen aus dem Norden, und ſtießen unter den Kelten zuerſt, ſo weit bekannt, auf die Boier, wahrſcheinlich in Böhmen. Es war ein wunderbarer Zug, desgleichen die Römer noch nicht geſehen hatten, ein wanderndes Volk, das mit Weib und Kind, mit Habe und Gut auszog, eine neue Heimath ſich zu ſuchen. Der Wagen war hier gleichſam das Haus, wo unter dem übergeſpannten Lederdach neben dem Geräth Platz ſich fand für die Frau und die Kinder, und ſelbſt für den Haushund. Die Südländer ſahen mit Verwunderung dieſe hohen ſchlanken Geſtalten mit den tiefblonden Locken, und den hellblauen Augen, die ſtarken ſtattlichen Frauen, die den Männern an Größe wenig nachgaben, die Kinder mit dem Greiſenhaar, wie die Italiener verwundernd die flachsköpfigen Jungen des Nordlandes

bezeichneten. Das Kriegsweſen war weſentlich das der Kelten dieſer Zeit, die nicht mehr wie einſt die Italiſchen, mit unbedecktem Haupt, bloß mit Schwert und Dolch fochten, ſondern mit kupfernen, oft reich geſchmückten Helmen und mit einer eigenthümlichen Wurfwaffe; daneben war das große Schwert geblieben und der lange ſchmale Schild, neben dem man wohl noch einen Panzer trug. An Reiterei fehlte es nicht; doch waren die Römer in dieſer Waffe ihnen überlegen. Die Sitten waren rauh. Das Fleiſch ward häufig roh verſchlungen. Heerkönig war der tapferſte, und wo möglich der längſte Mann. So zogen die Kimbrer hinein in das unbekannte Land. Wie ein Blitz kamen und trafen ſie; wie ein Blitz waren ſie verſchwunden.

Mommſen.

2. Translate into German :—

At the age of eleven years, William, having unexpectedly succeeded to great possessions, was sent from his father's roof to be educated in Brussels. No destiny seemed to lie before the young prince but an education at the Emperor's court, to be followed by military adventures, embassies, viceroyalties, and a life of luxury and magnificence. At a very early age he came accordingly as a page into the Emperor's family. Charles recognized, with his customary quickness, the remarkable character of the boy. At fifteen William was the intimate, almost the confidential, friend of the Emperor, who prided himself, above all other gifts, on his power of reading and of using men. The youth was so constant an attendant upon his imperial chief that, even when interviews with the highest personages and upon the gravest affairs were taking place, Charles would never suffer him to be considered superfluous or intrusive. There seemed to be no secrets which the Emperor held too high for the comprehension or discretion of his page. He was brought up behind the curtain of that great stage, where the world's dramas were daily enacted. The machinery and the masks which produced the grand delusions of history had no deceptions for him. Carefully to observe men's actions, and silently to ponder upon their motives, was the favourite occupation of the Prince during his apprenticeship at court.—MOTLEY.

II. Literaturfragen.

1. Ueber die poetiſchen Leiſtungen von Haller und Hagedorn.

2. Ueber die Dichter der „Bremer Beiträge." Zu welchem Dichterverein gaben dieſelben Veranlaſſung?

3. Ueber Bürger als Lyriker und Balladendichter.

4. Ueber Iffland als Schauſpieldichter, und über Engel als Romanſchriftſteller.

---

5. Ueber Leſſing als Kritiker und Dramatiker. Welche Tendenz befolgte er in ſeinem „Nathan dem Weiſen"?

6. Ueber Gellert als Verfaſſer von geiſtlichen Oden und Liedern, und als Fabeldichter. Wer waren die andern deutſchen Fabeldichter im achtzehnten Jahrhundert?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

ITALIAN.

Examiner: Prof. A. FARINELLI.

PAPER *a*.

I. GRAMMAR.

1. Give all the forms of the definite article in both genders and numbers, with suitable nouns.

2. Give the feminine forms of the words, *barone, sacerdote, educatore, pittore, traditore.*

3. Show by short examples when *lo, la, gli, le* are not articles.

4. Decline the personal pronouns in both genders and numbers.

5. Write down in words the ordinal numbers II., VI., X., XVIII., XLV.

6. Write in full the present indicative and subjunctive of the verbs *udire, dovere, dire, sapere.*

7. Correct the faults in the following phrases:—*Questa ragazza sono poche allegri*; *Voi non fosti buono ieri*; *Esponete altri ragioni.*

II.

Translate into English:—

(A) Giovanni Fantoni nacque nel 1775 in Fivizzano. La sua famiglia è annoverata tra le più segnalate di quella provincia. Egli fu educato prima dai padri Benedettini, poi nel Collegio Nazzareno di Roma. Soggiornò in Pisa per accudire agli studi filosofici e legali ma senza compirli; ebbe quindi un impiego a Firenze, ma in breve abbandonò questa città e l' impiego per ascriversi nelle milizie del re di Sardegna. La vivacità del naturale, e l' intolleranza d' ogni servilità e freno, cagioni principali del suo frequente mutare di proposito e di soggiorno, lo costrinsero presto a lasciare anche la professione delle armi; nè ebbe miglior ventura a Roma, dove lo ricondusse la speranza degl' impieghi ecclesiastici col favore d' un prelato suo parente, nè a Napoli, dove gli amici e i congiunti ambivano di vedergli acquistare la grazia del re come gli altri cortigiani. La poesia, alla quale era naturalmente e fervidamente inclinato, lo distolse infine dall' andare dietro ai fastasmi dell' ambizione o della fortuna; e contento delle modiche entrate della paterna eredità, si ritirò nella quiete della sua patria e quivi si diede tutto agli studi poetici. THOUAR, *Racconti.*

(B) Serena, o bella vergine,
Omai le luci torbide,
Chè teco è Citerea,
La vaga Dea, che cogli sguardi tempera
Il ciel, le fere e gli uomini.
L' agitator del fulmine
Solca per te l' oceano
Sotto bovine spoglie.
Tu sua futura moglie apprendi a reggere
Sì nobil sorte e prospera.
A te per lui non possono
I venti e l' onda nuocere.
Va pur sicura e lieta
Ch' avrai di Creta antica or or nell' isola
Seco commune il talamo.

Da te suo nome traere
  La più gloriosa e nobile
  Parte vedrem del mondo,
  E dal tuo sen fecondo alta progenie
  D' illustri regi sorgere.
Ormai tutte se n' escano
  Le deità marittime
  Fuor delle placid' onde,
  Ed alle sponde della terra prossima
  La bella Europa seguano.

METASTASIO, *Il Ratto d'Europa.*

III.

Translate into Italian :—

JOHN MILTON.—It may not be generally known, but the world is indebted for the beautiful poem, 'Paradise Lost,' to a circumstance which happened to Milton when in Italy. When young, he possessed a remarkably handsome person, united to a very intelligent countenance. Rambling one fine summer's day with his companions, in a most picturesque locality, he felt fatigued, and threw himself at the foot of a tree, where he soon fell asleep. Two ladies passing that way observed him, and stood for some time contemplating him, when one of them took from a small pocket-book a slip of paper and, with a pencil, wrote some lines complimenting him on his beauty (Milton's companions observing at a little distance), laid them on his breast, and with her companion walked away. When Milton awoke, he discovered the complimentary lines, and it is said, months were devoted in search of the fair composer, but in vain. This circumstance induced him to write his sublime poem, which, in compliment to the unknown fair, he entitled '*Paradise Lost.*'

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

ITALIAN.

Examiner: Prof. A. FARINELLI.

PAPER *b*.

I. GRAMMAR.

1. Unite the definite article to the following prepositions:—*di, a, in, con, su.*

2. Prefix the definite article to the following words:—*stivale, speranza, amica, angeli, coltelli, zucchero, spiriti, fratello.*

3. Give four examples of the use of the particles *ne, nè, ci, vi.*

4. What is the difference between *gesti* and *gesta?* Illustrate it by two examples.

5. What is the meaning of *il mio, i tuoi, i nostri?*

6. Give three different examples of the use of *qualche, ogni, nessuno.*

7. Explain the following verbal forms and say what are their infinitives:—*crebbi, nacqui, escano, nocque, condussi.*

II.

Translate into English:—

(A) Per la ragione che gl' Italiani hanno voluto fare un' Italia nuova, e loro rimanere gl' Italiani vecchi di prima, colle dappocaggini e le miserie morali che furono ab antico il loro retaggio; perchè pensano a riformare l' Italia, e nessuno si accorge che

per riuscirvi bisogna prima riformare sè stesso; perchè l' Italia, come tutt' i popoli, non potrà divenir nazione, non potrà essere ordinata, ben amministrata, forte così contro lo straniero come contro i settari dell' interno, libera e di propria ragione, finchè grandi e piccoli e mezzani, ognuno nella sua sfera non faccia il suo dovere, e non lo faccia bene, od almeno il meglio che può. Ma a fare il proprio dovere, il più delle volte fastidioso, volgare, ignorato, ci vuol forza di volontà e persuasione che il dovere si deve adempire non perchè diverte o frutta, ma perchè è dovere; e questa forza di volontà, questa persuasione, è quella preziosa dote che con un vocabolo si chiama *carattere*, onde per dirla in una parola sola, il primo bisogno d' Italia è che si formino Italiani dotati d' alti e forti caratteri.

MASSIMO D'AZEGLIO, *I Miei Ricordi.*

(B) *La Montagna delle Miniere.*

Mal fanno quegli avari
Che accumulan denari,
Ma fa peggio di loro
Chi mostra il suo tesoro.
Una certa Montagna
Situata in Cuccagna,
Avea l' alpestre seno
Tutto quanto ripieno
Di quel biondo metallo
Che fa far più d' un fallo.
Pur sempre ella era stata
Montagna non curata,
Perchè nessun vedere
Potea le sue miniere.
Un dì le venne in testa
Di render manifesta,
Forse per vanità,
Sua ricca qualità;
E dai vasti tesori
Del suo sen gettò fuori
Zolla d' oro impregnata,
Che giù giù rotolata.
Andò così lontano
'A fermarsi nel piano.
Il popol corse in folla
Intorno all' aurea zolla;
Poscia mosso da spene
Di trovar l' auree vene,
La Montagna scavò,
Travagliò, depredò;
E da quel tristo dì
Pace per lei finì.

CLASIO, Favole.

III.

te into Italian :—

ıto tells a pretty story of a fairy, who, by some mys-
law of her nature, was condemned to appear at certain
in the form of a foul and poisonous snake. Those
ıured her during the period of her disguise were for
cluded from participation in the blessings which she
d. But to those who, in spite of her loathsome aspect,
nd protected her, she afterwards revealed herself in the
ıl and celestial form which was natural to her; accom-
their steps, granted all their wishes, filled their houses
ealth, and made them happy in love and victorious in
uch a spirit is Liberty. At times she takes the form of
ıl reptile. She grovels, she hisses, she stings. But woe
e who in disgust shall venture to crush her! And
are those who, having dared to receive her in her de-
and frightful shape, shall at length be rewarded by her
ime of her beauty and her glory! There is only one
the evils which newly acquired freedom produces; and
e is freedom. When a prisoner first leaves his cell he
bear the light of day; but the remedy is, not to remand
his dungeon, but to accustom him to the rays of the

MACAULAY.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GENERAL HISTORY & POLITICAL ECONOMY.

PAPER *a*. HISTORY OF ENGLAND FROM 1790 TO 1850.

Examiner: Rev. W. CUNINGHAM, B.D., D.Sc.

1. Write a short history of the English navy in the years 1797, 1798, and explain the objects of the various expeditions in which it then engaged.

2. What were the Berlin Decrees, and what retaliatory measures did they call forth?

3. Write a brief history of the struggle in regard to Catholic Emancipation.

4. What were the provisions of the Corn Law of 1815? Why was it passed? Give some account of the struggle for the repeal of the Corn Laws.

5. State fully the changes which were made in the system of Representation in England by the Act of 1832. How did the working classes regard the measure?

[*Turn over.*

6. What was the nature of the legal provision for the poor before 1834? Explain any defects in its administration and effects of its operation which rendered considerable changes necessary.

7. Give some account of the Irish famine, and of the measures which were taken in connexion with it.

8. Give some account of the Luddites, the Repealers, the Holy Alliance, the Ministry of All the Talents, the Canningites.

9. Write a history of the improvements in means of transit which took place during this period.

10. Write a brief life of each of the following:—

(*a*) The Duke of Wellington, (*b*) Lord Liverpool, and (*c*) Sir Robert Peel.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

GENERAL HISTORY AND POLITICAL ECONOMY.

PAPER *b*. POLITICAL ECONOMY.

Examiner: Rev. W. CUNINGHAM, D.Sc., B.D.

1. How would you define *wealth*? What use of the terms *productive labour* and *capital* accords best with your definition?

2. Discuss the respective advantages and disadvantages of production on a large and on a small scale both in regard to agriculture and manufactures.

3. "Wages are paid out of capital." Discuss the truth of this statement (*a*) at a given moment, and (*b*) over a considerable period of years.

4. If I suddenly change my expenditure from purchasing pine-apples to the hiring of labourers to drain a field. How do I affect (*a*) different classes in the community, and (*b*) the wealth of the community as a whole?

5. What are the advantages and disadvantages of according a right of private property in land? Discuss with reference to old and new countries respectively.

[*Turn over.*

6. What are the chief difficulties in comparing the real wages of labour in the same country at different times, and in different countries at the same time?

7. Examine carefully the conditions which enable one country to undersell another. On whom does the loss fall, and to whom does the gain accrue?

8. Give an account of the similarities and differences between credit and capital.

9. What are the economic evils of (*a*) direct taxation, (*b*) changes in taxation? Explain what you mean by equality in taxation, and discuss whether the working classes in England bear an insufficient share of the public burdens.

10. Discuss the wisdom of State influence (*a*) to protect from competition, and (*b*) to render competition really free.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

JURISPRUDENCE AND CONSTITUTIONAL HISTORY.

PAPER *a*. JURISPRUDENCE.

Examiner: W. A. HUNTER, M.A., LL.D.

1. State and criticize the answers that have been given to the question, What is the true end or object of legislation?

2. The term "law" "is occasionally applied to particular commands," but it is more correctly used "where it obliges generally to acts or forbearances of a class." Illustrate this distinction.

3. What are the different meanings of *jus*? Explain *jus realiter personale*.

4. Should the law of Things precede the law of Persons?

5. Distinguish between absolute and relative duties. Enumerate the instances of absolute duties.

6. "Every government is a government *de facto*." Explain this proposition. Of what principle is it a corollary?

7. State the grounds of non-imputability.

8. Enumerate the "sources of law."

9. Give illustrations of conflict between positive law and positive morality.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

JURISPRUDENCE AND CONSTITUTIONAL HISTORY.

PAPER *b*. CONSTITUTIONAL LAW AND HISTORY.

Examiner: W. A. HUNTER, M.A., LL.D.

1. What were the political and social results of the dissolution of the monasteries?

2. What illegal exactions of money were made by Henry VII. and Henry VIII.?

3. State the provisions of the Statute of Treasons? What is constructive treason? Upon what grounds have the dynamitards been held guilty of treason felony?

4. Account for the strength of the royal prerogative under the Tudors.

5. Give instances of illegal interference with the freedom of elections by James I., and what parliamentary disputes arose out of such interference?

[*Turn over.*

6. Describe the judicial procedure that the Normans found existing in England. What changes did they introduce?

7. What alterations in Constitutional Law may be traced to the Revolution of 1688?

8. Describe the origin and development of trial by jury.

9. In what cases has the right of the King to commit to prison without cause assigned been questioned in the Courts of Law?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

MATHEMATICS.

PAPER *a*. GEOMETRY AND TRIGONOMETRY.

Examiner: Prof. C. NIVEN, F.R.S.

1. Any two sides of a triangle are together greater than the third. If a triangle and quadrilateral stand on the same base and none of the angles of the latter are reentrant, prove that the perimeter of the triangle is greater than that of the quadrilateral.

2. If a straight line AB be divided into any two parts at the point C, prove that the squares on AB, BC are together equal to twice the rectangle under AB, BC, together with the square on AC.

3. The angles in the same segment of a circle are equal to one another. State and prove the converse of this proposition.

4. If a chord of a circle and a tangent be drawn from an external point, the square on the tangent is equal to the rectangle under the segments of the chord.
Describe the circles which pass through two given points and touch a given straight line.

[*Turn over.*

5. About a circle describe a triangle equiangular to a given triangle.

6. Find a third proportional to two given straight lines.

7. Prove, from the definitions of the sine and tangent of an angle, that $\sin A = \dfrac{\tan A}{\sqrt{1+\tan^2 A}}$.

Find the sines of 30° and of 675°.

8. If

$$\sin A = \tan b \tan c, \quad \sin B = \tan a \tan c, \quad \tan A \tan B = \sin c,$$

prove that

$$\sin c = \cos a \cos b.$$

9. Prove the formulæ

$$\sin 2A = 2 \sin A \cos A,$$

$$\sin^4(A+45^\circ) - \sin^4(A-45^\circ) = \sin 2A.$$

10. Define a logarithm, and prove that $\log \dfrac{a}{b} = \log a - \log b$.

Find x from the equation $(\frac{4}{5})^x = \frac{2}{3}$, being given

$$\log_{10}2 = {\cdot}30103,$$

$$\log_{10}3 = {\cdot}47712.$$

11. Find formulæ for solving a triangle when the three sides are given.

The sides of a triangle are $\frac{2}{3}$, $\frac{5}{6}$, $\frac{11}{8}$; find the greatest angle, being given

$$\log 207 = 2{\cdot}31597, \quad \log 1073 = 3{\cdot}03060\,;$$

$$\text{L} \cot 66^\circ\ 18' = 9{\cdot}64243, \text{ diff. for } 1' = 34.$$

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

MATHEMATICS.

PAPER *b*. ALGEBRA.

Examiner: Prof. C. NIVEN, F.R.S.

1. Show that

$$(\overline{a-c}\,.\,c+\overline{a-b}\,.\,b)(a-b)+(\overline{b-c}\,.\,c-\overline{a-b}\,.\,a)(a-c)$$

is exactly divisible by $a^2+b^2+c^2-ab-ac-bc$; and show that if $x+y+z=0$, then $yz-x^2=zx-y^2=xy-z^2$.

2. Find the Greatest Common Measure of $2x^3-x^2-4x+3$ and $4x^4-5x^3-x+2$, and the Least Common Multiple of $2x^2-2$, $3x^3+3$, $2x^2-2x-4$, x^2-x+1.

3. Find whether $\frac{a+x}{b+x}$ is greater or less than $\frac{a}{b}$, and whether $\frac{a+1}{b+1}$ is greater or less than $\frac{c+1}{d+1}$, it being given that $\frac{c}{d}$ is $\frac{a}{b}$ reduced to its lowest terms.

Simplify the following:—

$$(1)\quad \frac{1}{a-\dfrac{2}{5b+\dfrac{3}{a-b}}}.$$

$$(2)\quad \frac{x}{(1-x)^2}+\frac{2}{1-x}-\frac{x}{(1+x)^2}+\frac{2}{1+x}.$$

[*Turn over.*

4. Solve these equations:—

$$(1)\ 1=\frac{4x+3}{2x+1}-\frac{2x-3}{2x-1}.$$

$$(2)\ x-\frac{1}{2x}=1\tfrac{1}{6}.$$

$$(3)\ xy^2+y=21,\ x^2y^4+y^2=333.$$

5. You can buy from a wine-merchant 10 dozen sherry and 12 dozen claret for £48, and 5 dozen more of sherry can be had for £45 than of claret for £50: required the price of each per dozen.

6. Define ratio, and explain why the equality of two ratios may be expressed by equating two fractions.

If $a+b+c : -a+b+c :: a-b+c : a+b-c$, show that a is a mean proportional between $b+c$ and $b-c$.

7. Define a Geometrical Series, and find the sum of n terms of the series.

The 2nd and 5th terms of a Geometric Series are $-\frac{1}{3}$ and $\frac{8}{81}$; write down the intermediate terms, and sum the series to n terms and to infinity.

8. Write down the Binomial Theorem, and find the middle term, when there is one, and the sum of the alternate coefficients.

Find the coefficient of x^4 in the expansion of $(1-x+2x^2)^6$.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

MATHEMATICS.

PAPER *c*. ELEMENTARY MECHANICS AND HYDROSTATICS.

Examiner: Prof. C. NIVEN, F.R.S.

1. Explain how a force may be resolved into two forces whose directions are specified. Also state and prove the triangle of forces.

A door, whose height is 12 feet and breadth 5, turns about two hinges, one at the foot and the other (which is a smooth vertical bolt passing through a horizontal ring) halfway up, the door-post being vertical, and the weight of the door 120 lbs. Draw the actions at the hinges, and prove that they are respectively 50 lbs. and 130 lbs.

2. Find the resultant of two unequal parallel forces.

Three weights, 2, 3, 4, are placed at three angles of a square; find where it must be suspended from a hook on one of the sides, that this side may be horizontal.

3. Find the condition that a body of any shape may rest when placed on a horizontal plane.

A triangle ABC, obtuse-angled at C, is placed with AB in contact with a horizontal plane, and CD is drawn perpendicular on AB produced; prove that equilibrium will be possible or impossible according as BD is less or greater than AB.

[*Turn over.*

4. State the conditions to be observed in constructing a good balance. How is it possible to weigh accurately with an imperfect balance ?

5. State the laws of motion, and examine briefly the evidence for them.

6. Explain the symbols u, g, in the equation of motion of a rising body $s = ut - \frac{1}{2}gt^2$, and prove the equation.

A man drops a stone over a bridge into a stream beneath, and three seconds afterwards hears the splash ; assuming that sound travels at the rate of 1090 feet per second, find the height of the bridge.

7. Find the resultant pressure on a body either wholly or partially immersed in water.

8. Explain the use of Nicholson's hydrometer in finding the specific gravity of heavy fragments.

In weighing some fragments whose specific gravity is 8·8 in the hydrometer, 240 grains and 370 grains respectively have to be added : find the weight of the fragments.

9. Describe the air condenser, and find the pressure in the receiver after n strokes.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

PHYSICAL SCIENCE.

PAPER *a*. HEAT, INCLUDING RADIANT HEAT.

Examiner: Prof. SILVANUS THOMPSON, D.Sc., B.A.

1. Describe the process of measuring the specific heat of a small piece of metal. What circumstances must be taken into account and allowed for if the result is to be relied on as accurate?

2. Tabulate briefly the various methods which have been proposed for determining the value of Joule's mechanical equivalent of heat; and describe in particular one depending upon the measurement of the heat evolved in a voltaic circuit.

3. Carnot found the efficiency of a perfect heat-engine to depend not only on the difference of temperature between the heater and the refrigerator, but also upon the temperature of the heater as measured from a certain point below the ordinary zero. Show that in an engine in which air is the working substance, that point will be at 273 degrees (Centigrade) below the freezing-point.

4. What is Newton's law of cooling? State it mathematically, and describe an experimental method of verifying it. Why is it not true for wide ranges of temperature?

[*Turn over.*

5. Describe the phenomena which are observed when a liquefied gas is slowly allowed to expand, (*a*) at a temperature much lower than its critical point, (*b*) at a temperature just below its critical point, (*c*) at a temperature just above its critical point. Can a solid body have a critical point?

6. Give a brief outline of the kinetic theory of gases, and explain in particular how it is that gases exert a pressure upon the surface of a solid body, and why that pressure is greater if the solid be warm than if it is cold.

7. Give some account of the researches of Melloni on the opacity of bodies to radiant heat. Explain also one of the methods by which the heat-rays of the spectrum have recently been investigated.

8. Explain the formation of dew? How is the relative humidity of the atmosphere measured? In what way does the degree of saturation of air with aqueous vapour depend upon the temperature?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

PHYSICAL SCIENCE.

PAPER *b*. SOUND AND LIGHT.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Why does sound travel faster in water than in air? Describe some experiment proving this fact. Show how to calculate the theoretical velocity of sound in water from experiments made on the force required to compress it.

2. If a vibrating tuning-fork be held to the ear, and turned round slowly between the finger and thumb while so vibrating, it is noticed that there are four positions, nearly at right angles to one another, in which little or no sound is heard. Give a full explanation of this.

3. Explain the principle of the superposition of small motions. Show by a careful sketch the wave-form of the sound made by the simultaneous sounding of a note and its octave, and point out how this form will be modified by changing the phase of one of the components.

4. Show that for any ordinary thin magnifying lens there is, for every point that may be taken on the axis as a focus from which rays diverge, a conjugate point to which these rays will converge, and that that conjugate point will also be in the axis. Show that in a plano-convex lens having radius of curvature r, and index of refraction μ, the principal focal length f has the value

$$f = \frac{r}{\mu - 1}.$$

[*Turn over*

5. Show that if in the usual formulæ for refraction at a single plane or spherical surface we substitute for the index of refraction the value -1, we obtain the corresponding formulæ for reflexion at a plane or spherical surface.

Does the quantity of light reflected at the surface of a substance depend in any way on its index of refraction?

6. Newton's rings are made by laying upon a plane sheet of glass a lens of small curvature. Suppose the radius of curvature of the surface to be two metres, and the wave-length in air of green light to be 0·00005 centimetre, calculate the diameter of the first bright ring as viewed by reflexion in green light at nearly normal incidence.

How would the system of rings be affected by running in bisulphide of carbon between the lens and the sheet of glass? How would the substitution of a polished silver plate for the sheet of glass then affect the rings?

7. Explain the system of prisms used in a direct-vision spectroscope. What is meant by irrationality of dispersion? How does it affect spectroscopic measurements of wave-lengths?

8. Describe and sketch the lens-system of an opera-glass. How must the positions of the lenses be altered to suit a short-sighted person?

9. The light reflected at the surface of a pond is partly polarized. How would you ascertain the position of the plane of polarization and the proportion of polarized rays present?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

PHYSICAL SCIENCE.

PAPER *c*. ELECTRICITY AND MAGNETISM.

Examiner: Prof. SILVANUS P. THOMPSON, D. Sc., B.A.

1. Describe the construction of a simple ordinary electric machine, and explain its action in conformity with the doctrines of energy, without having recourse either to the language or the ideas of the old two-fluid theory.

2. If a disk of copper or any metal is set in rotation beneath a suspended compass-needle, the needle is observed to turn in the sense of the rotation. Explain this.

3. A copper tube rotated between the poles of a powerful magnet is observed to grow warm. Explain this.

4. A bundle of thin wires of soft iron is hung by a long thin thread horizontally, and makes an angle of 45° with the plane of a coil of fine wire, whose aperture is horizontal, and which surrounds the bundle. On sending through the coil the rapidly alternating currents generated in the secondary wire of an induction-coil the bundle is observed to be deflected to a greater angle. Explain this.

[*Turn over.*

5. Give an account of a method of determining the horizontal component of the earth's magnetic field.

6. State the principal laws of electrodynamics, and show by applying the principle of the conservation of energy, that if two conductors carrying concurrent currents attract one another, a non-concurrent current will be generated in a conductor (closed on itself) which is moved towards a conductor which already carries a current.

7. Give Ampère's rule for the mutual reaction between a current and a magnet pole. Sketch the lines of force of the magnetic field due to an indefinitely long straight conductor; and calculate the force it exerts on a unit-pole at distance $=a$ when traversed by a current $=i$.

8. What is an electromagnet? What rule can you give for the amount of magnetism evoked in an electromagnet by currents of different strengths? An electromagnet having many turns of thick wire is introduced into a simple circuit along with a galvanometer, a battery, and a key. Discuss the actions occurring on making the circuit and on breaking the circuit.

9. What is a condenser? A condenser is placed in a simple circuit along with a galvanometer having many turns of fine wire, a battery of cells, and a key. Discuss the actions occurring on making connexion and on breaking connexion.

10. Explain the connexion existing between the heat of combustion of a metal, its electrochemical equivalent and its position in the volta-electric series.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

CHEMISTRY.

PAPER *a*.

Examiner: Prof. W. A. Tilden, D.Sc., F.R.S.

1. Describe the materials and apparatus to be employed in making ordinary strong solution of ammonia.

How would you proceed to ascertain the quantity of ammonia in a given sample of the solution?

2. What proportion of carbon dioxide is commonly to be found in atmospheric air, how does it get there, and what are the chief geological and physiological functions of carbonic acid in nature?

3. What do you understand by the "Atomic Theory"?

Protoxide of tin contains 88·1 per cent. of tin to 11·9 of oxygen, whilst the peroxide contains 78·7 per cent. of tin and 21·3 of oxygen. Illustrate the law of multiple proportions by this example and explain it by the Atomic Theory.

4. How is potassium chlorate manufactured?

[*Turn over.*

5. Describe the properties of the following sulphides :—Fe
FeS_2, Sb_2S_3, HgS.

6. A colourless solution gives with hydrogen sulphide a da
brown precipitate. This precipitate dissolves in yellow sulphi
of ammonium, and on adding to this solution excess of hydr
chloric acid, a dull yellow precipitate is thrown down ; wh
metal was present in the original solution ?

7. How many tons of pyrites containing 48 per cent.
sulphur would be theoretically required to produce the sulphur
acid necessary to make 10 tons of ammonium sulphate ?

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

CHEMISTRY.

PAPER *b*.

Examiner: Prof. W. A. Tilden, D.Sc., F.R.S.

1. How are the following anhydrides obtained?—
N_2O_5, SO_3, $(C_2H_3O)_2O$, and $(CH_2CO)_2O$.

2. 10 c. c. of a gas are mixed with 50 c. c. of oxygen in a eudiometer, and exploded. The volume of gas remaining was 35 c. c., and of this 30 c. c. were absorbed by potash. Supposing the gas to have been a hydrocarbon what was its formula?

3. Give some examples of the influence of "mass" in determining chemical reactions, and explain them.

4. How is hydrocyanic acid prepared, and how would you detect its presence in an article of food, such as milk?

5. Write down the formulæ for propylic and isopropylic alcohols and for the products formed from them by oxidation.

6. Give briefly the properties of cane sugar and dextro-glucose and the tests by which they may be recognized.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

NATURAL SCIENCE.

GEOLOGY AND MINERALOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *a*.

1. Define what is meant by *Intrusive* and *Interstratified* Igneous Rocks respectively. Draw one or more sections showing the relative age of such rocks.

2. What relation to Continental Areas is to be observed among the chief Mountains of the World? Illustrate your answer with a diagram; and explain your views of the Origin of Mountains.

3. In what formations are bones of the Moa found in New Zealand? Under what circumstances were they probably imbedded? What is the present distribution of the Birds to which it is allied?

4. Trace the Geological History of the Cephalopoda.

[*Turn over.*

5. Give brief mineralogical descriptions of Kaolin, Talc, Glauconite, Selenite, and Apatite, with notes on their usual methods and places of occurrence.

6. How would you distinguish between rocks formed (1) in a deep sea, (2) in a shallow sea, (3) in a lake, and (4) at the foot of a glacier?

7. How do you define a "Raised Beach"? What does it teach? Mention some well known examples in New Zealand and elsewhere.

8. What strata in New Zealand are representatives of the Silurian (Lower and Upper, or Ordovician and Silurian) rocks of Australia and Europe? Give some notes on the fossils, and on the points of resemblance and difference.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

NATURAL SCIENCE.

GEOLOGY AND MINERALOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *b*.

1. Draw a geological section of any part of New Zealand with which you are acquainted, and as nearly on a true scale as you can. Give full references to the several Formations shown in the Section, and mention their European equivalents.

2. What are the best bases for a Classification of Rocks? Give reasons for your answer.

3. By what means are the various Mineral Species recognized?

4. Give a short account—chemical, crystallographic, and mineralogical—of the following Minerals:—Quartz, Orthoclase, Augite, and Olivine.

[*Turn over.*

5. Describe the microscopic structure of Quartzite, Marble, Mica-schist, and Slate, as seen in thin slices.

6. Make free-hand drawings of two different crystals of Fluor, of Diamond, and of Garnet. Show and explain how they all belong to one crystallographic system.

7. Compare the fossil Plants of the Jurassic with those of the Carboniferous Period.

8. Enumerate the fossil Reptilia known to occur in New Zealand; refer them to their geological formations, and to their natural families.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *a*. GENERAL PRINCIPLES.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Describe the essential structural features of a cell, and the phenomena which accompany cell-division. Mention all the instances you can in which the movement of the protoplasm of cells, either animal or vegetable, can be observed with the microscope, and describe the peculiar features of each case.

2. Give a full account of the chemical processes attendant upon nutrition in (1) plants, and (2) animals.

3. Describe (illustrating your description by sketches) the appendages of a Crayfish. How does the Crayfish exhibit a "repetition of parts"? In what way do the higher plants exhibit the same principle of construction?

4. How do you account for the existence of wingless birds in New Zealand?

5. Describe, and point out the equivalent stages in, the sexual reproduction of a Fern and a Flowering Plant.

6. Give an account of the first development and the subsequent modifications of the Vertebrate Notochord.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *b* (1). ZOOLOGY.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Give as complete a classification of the Animal Kingdom as you can as far as "classes." Give examples of the chief forms included in each class.

2. Describe the characteristic structure and life-history of the Radiolaria, *or* of the Gregarinidea (Sporozoa), *or* of the Ciliata.

3. Describe the different kinds of Medusæ or "medusiform persons" known, and their relations to "hydriform persons."

4. Give the characters of the chief groups of Fishes.

5. State fully the points of structure in which the Monotremata differ from the other Mammalia.

[*Turn over.*

6. Give an account of the anatomy and life-history of the Trematoidea *or* of the Cestoidea.

7. Describe the characteristic structure and life-history of one of the following groups:—the Echinoderma, the Polyzoa, the Nemertina, the Chætopoda, the Crustacea. Point out the chief variations of structure in the group selected.

8. Give an account of the essential structure of the renal apparatus in the Vertebrata: describe the modifications of its parts and their relation to the generative system in the different classes of Vertebrata.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

NATURAL SCIENCE.

PAPER *b* (2). BOTANY.

Examiner: S. H. VINES, M.A., D.Sc.

1. Describe accurately the structure of a growing plant-cell. Give an account of the mechanism of its growth, and state what are the essential external conditions.

2. Describe in detail, with reference to any plants which you may have examined, the appearances presented by a transverse section of
    (*a*) an open collateral fibro-vascular bundle.
    (*b*) a closed collateral fibro-vascular bundle.
    (*c*) a closed concentric fibro-vascular bundle.

3. Explain the meaning of the term "fruit," when used (*a*) in a physiological sense, and (*b*) when used in the strictly morphological sense, with reference to Phanerogams.
   Illustrate your explanation by reference to the fruits of the sub-orders of Rosaceæ.

4. Enumerate the chemical elements which are essential to the nutrition of plants, and briefly state what is known as to the special importance of each element.

[*Turn over.*

5. Describe, in any instances which you may select,
   (*a*) the process of conjugation;
   (*b*) the fertilization of an oosphere by an antherozoid.
Compare the two processes.

6. Give a comparative account of the structure and development of hypogynous, perigynous, and epigynous flowers. Illustrate your account by reference to examples.

7. What rays of the spectrum are most active in promoting the formation of organic substance by green plants? Adduce evidence in support of your statement.

8. State the characteristics of the group Gymnospermæ, and indicate the nature of its affinities with the Vascular Cryptogams on the one hand, and with the Angiosperms on the other.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

MENTAL SCIENCE.

PAPER *a*. PSYCHOLOGY AND ETHICS.

Examiner: JAMES SULLY, M.A.

1. What do you understand by a Sense, and what physiological structures are necessary to it? How many Senses have we?

2. Show how the Sense of Touch contributes to the Visual Perception of Form.

3. State and illustrate the Law of Similarity and the Law of Contiguity, and show how they are related one to another.

4. To what extent are the retention and the reproduction of knowledge dependent on our volitions?

5. How would you define Constructive Imagination?
Compare the activity of Imagination in the invention of a fictitious story with its activity in the discovery of a Scientific Truth.

[*Turn over*

6. Define and illustrate the mental processes known as Discrimination, Comparison, Abstraction, and Judgment, and point out their relations one to another.

7. Is it possible to resolve the Moral Sentiment (*a*) into a form of Fear, (*b*) into a mode of Sympathy ?

8. How far can the Intuitionist allow that Happiness and Duty ultimately coincide ?

9. Distinguish for ethical purposes between (*a*) Good and Right, (*b*) Motive and Intention, and (*c*) Duty and Virtue.

UNIVERSITY OF NEW ZEALAND.

B.A. PASS EXAMINATION, 1885.

MENTAL SCIENCE.

PAPER *b*. LOGIC.

Examiner: JAMES SULLY, M.A.

1. What is meant by saying that Logic is both a Science and an Art? As a Science distinguish it from Psychology, and as an Art distinguish it from Rhetoric.

2. Unfold the distinction between Concrete and Abstract Terms.
Under which head would you place the following:—*Red, Idea, Government.*

3. Give the several logical "Opposites" of the proposition "No men are infallible," and state which of them are known to be true if the original is denied.

4. Describe, and illustrate by a concrete example if possible, the moods known as *Camestres* and *Darapti,* and reduce them to the First Figure.

5. Define and illustrate the fallacy known as that of *Accident,* together with its opposite.
How is this fallacy related to that of Equivocation or Ambiguous Middle?

[*Turn over.*

6. Briefly expound and examine (*a*) the view that all Induction is Deduction, and (*b*) the view that all Deduction is Inductive.

7. Distinguish between the popular and the scientific idea of Cause, and argue the question whether the logician is at liberty to conceive of the Cause as simultaneous with the Effect.

8. What is a Hypothesis, and what purpose does it serve?
When does a supposition become a legitimate Hypothesis, and when does a Hypothesis cease to be a Hypothesis, and become a Truth of Science?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

LATIN LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

I. *Translate into English, with brief notes when required:—*

(A.) Cicero: Epist. ad Attic. iv. 2, § 5.

Postridie senatus consultum factum est id, quod ad te misi. Deinde consules porticum Catuli restituendam locarunt: illam porticum redemptores statim sunt demoliti libentissimis omnibus. Nobis superficiem aedium consules de consilii sententia aestimarunt sestertio viciens: cetera valde illiberaliter: Tusculanam villam HS quingentis milibus: Formianum HS ducentis quinquaginta milibus. Quae aestimatio non modo vehementer ab optimo quoque, sed etiam a plebe reprehenditur. Dices 'quid igitur causae fuit?' Dicunt illi quidem pudorem meum, quod neque negarim neque vehementius postularim. Sed non est id: nam hoc quidem etiam profuisset. Verum iidem, mi T. Pomponi, iidem, inquam, illi, quos ne tu quidem ignoras, qui mihi pinnas inciderant, nolunt easdem renasci. Sed, ut spero, iam renascuntur. Tu modo ad nos veni: quod vereor ne tardius interventu Varronis tui nostrique facias.

(B.) LIVY: xxvi. 45. 6–9.

Vix prior tumultus conticuerat, cum Scipio ab defessis iam vulneratisque recentes integrosque alios accipere scalas iubet, et vi maiore aggredi urbem. Ipse, ut ei nuntiatum est, aestum decedere, quod per piscatores Tarraconenses, nunc levibus cymbis, nunc, ubi eae siderent, vadis pervagatos stagnum, compertum habebat, facilem pedibus ad murum transitum dari, eo secum armatos duxit. Medium ferme diei erat: et ad id, quod sua sponte cedente in mare aestu trahebatur aqua, acer etiam septentrio ortus inclinatum stagnum eodem, quo aestus, ferebat, et adeo nudaverat vada, ut alibi umbilico tenus aqua esset, alibi genua vix superaret. Hoc, cura ac ratione compertum, in prodigium ac deos vertens Scipio, qui ad transitum Romanis mare verterent, et stagna auferrent, viasque ante nunquam initas humano vestigio aperirent, Neptunum iubebat ducem itineris sequi, ac medio stagno evadere ad moenia.

(C.) VERGIL: Aeneid, vii. 292–312.

Tum quassans caput, haec effundit pectore dicta:
"Heu stirpem invisam, et fatis contraria nostris
Fata Phrygum! num Sigeïs occumbere campis,
Num capti potuere capi? num incensa cremavit
Troia viros? medias acies mediosque per ignes
Invenere viam. At, credo, mea numina tandem
Fessa iacent, odiis aut exsaturata quievi—
Quin etiam patria excussos infesta per undas
Ausa sequi, et profugis toto me opponere ponto:
Absumtae in Teucros vires caelique marisque.
Quid Syrtes, aut Scylla mihi, quid vasta Charybdis
Profuit? optato conduntur Thybridis alveo,
Securi pelagi atque mei. Mars perdere gentem
Immanem Lapithum valuit; concessit in iras
Ipse deum antiquam genitor Calydona Dianae;
Quod scelus aut Lapithas tantum, aut Calydona merentem?
Ast ego, magna Iovis coniux, nil linquere inausum
Quae potui infelix, quae memet in omnia verti,
Vincor ab Aenea. Quod si mea numina non sunt
Magna satis: dubitem haud equidem implorare quod usquam est.
Flectere si nequeo superos, Acheronta movebo."

(D.) **Horace**: Epist. i. 10. 12–33.

Vivere naturae si convenienter oportet,
Ponendaeque domo quaerenda est area primum;
Novistine locum potiorem rure beato?
Est ubi plus tepeant hiemes? ubi gratior aura
Leniat et rabiem Canis, et momenta Leonis,
Cum semel accepit solem furibundus acutum?
Est ubi divellat somnos minus invida cura?
Deterius Libycis olet aut nitet herba lapillis?
Purior in vicis aqua tendit rumpere plumbum,
Quam quae per pronum trepidat cum murmure rivum?
Nempe inter varias nutritur silva columnas;
Laudaturque domus, longos quae prospicit agros.
Naturam expellas furca, tamen usque recurret,
Et mala perrumpet furtim fastidia victrix.
Non, qui Sidonio contendere callidus ostro
Nescit Aquinatem potantia vellera fucum,
Certius accipiet damnum, propiusve medullis,
Quam qui non poterit vero distinguere falsum.
Quem res plus nimio delectavere secundae,
Mutatae quatient. Si quid mirabere, pones
Invitus. Fuge magna: licet sub paupere tecto
Reges et regum vita praecurrere amicos.

II. 1. Show by examples how the Romans replaced the lost aspirates, corresponding to χ, θ, and ϕ.

2. Describe the chief military roads of Italy, and the fortresses which commanded them.

3. Give some account of the meetings of the people in the time of Cicero, noting especially how they differed in functions and in organization from those of the early republic.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

LATIN LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *b*.

I. *Translate*:—

(A.) Lucretius, i. 897–920.

"At saepe in magnis fit montibus" inquis "ut altis
arboribus vicina cacumina summa terantur
inter se, validis facere id cogentibus austris,
donec flammai fulserunt flore coorto."
scilicet, et non est lignis tamen insitus ignis,
verum semina sunt ardoris multa, terendo
quae cum confluxere, creant incendia silvis:
quod si facta foret silvis abscondita flamma,
non possent ullum tempus celarier ignes,
conficerent volgo silvas, arbusta cremarent.
iamne vides igitur, paulo quod diximus ante,
permagni referre eadem primordia saepe
cum quibus et quali positura contineantur
et quos inter se dent motus accipiantque,
atque eadem paulo inter se mutata creare
ignes et lignum? quo pacto verba quoque ipsa
inter se paulo mutatis sunt elementis,
cum ligna atque ignes distincta voce notemus.
denique iam quae cumque in rebus cernis apertis
si fieri non posse putas, quin materiai
corpora consimili natura praedita fingas,
hac ratione tibi pereunt primordia rerum:
fiet uti risu tremulo concussa cachinnent
et lacrimis salsis umectent ora genasque.

1. What is the theory which Lucretius here refutes?

2. Give the derivation and meaning of *utqui, belle, vacillo, saecla, vescus, armenta, concilium, dissaepit.*

(B.) Lucretius, vi. 225–238.

> Hunc tibi subtilem cum primis ignibus ignem
> constituit natura minutis mobilibusque
> corporibus, cui nil omnino obsistere possit.
> transit enim validum fulmen per saepta domorum
> clamor ut ac voces transit per saxa, per aera.
> et liquidum puncto facit aes in tempore et aurum,
> curat item vasis integris vina repente
> diffugiant, quia nimirum facile omnia circum
> conlaxat rareque facit lateramina vasis
> adveniens calor eius, et insinuatus in ipsum
> mobiliter soluens differt primordia vini.
> quod solis vapor aetatem non posse videtur
> efficere usque adeo pellens fervore corusco.
> tanto mobilior vis et dominantior haec est.

1. What was the connexion between the physical theories of Epicurus and his ethical system?

2. *Translate with brief notes:—*

(*a*) Lucretius, ii. 519–521.

> Ergo finita distant ratione creata,
> ancipiti quoniam mucroni utrimque notantur,
> hinc flammis illinc rigidis infesta pruinis.

(*b*) Lucretius, v. 725–726.

> Inde minutatim retro contorquet et aufert
> luciferam partem glomeraminis atque pilai.

(*c*) Lucretius, v. 1361–1366.

> At specimen sationis et insitionis origo
> ipsa fuit rerum primum natura creatrix,
> arboribus quoniam bacae glandesque caducae
> tempestiva dabant pullorum examina supter:
> unde etiam libitumst stirpis committere ramis
> et nova defodere in terram virgulta per agros.

(C.) **Cicero**: De Finibus, iii. 5. 17, 18.

In principiis autem naturalibus plerique Stoici non putant voluptatem esse ponendam: quibus ego vehementer adsentior; ne, si voluptatem natura posuisse in iis rebus videatur quae primae adpetuntur, multa turpia sequantur. Satis esse autem argumenti videtur, quamobrem illa, quae prima sunt adscita natura, diligamus, quod est nemo, quin, cum utrumvis liceat, aptas malit et integras omnes partes corporis, quam eodem usu inminutas aut detortas habere. Rerum autem cognitiones quas vel comprehensiones vel perceptiones, vel, si haec verba aut minus placent aut minus intelleguntur, *καταλήψεις* adpellemus licet, eas igitur ipsas propter se adsciscendas arbitramur, quod habeant quiddam in se quasi complexum et continens veritatem: id autem in parvis intellegi potest: quos delectari videamus, etiam si eorum nihil intersit, si quid ratione per se ipsi invenerint. Artes etiam ipsas propter se adsumendas putamus; cum quia sit in his aliquid dignum adsumptione, tum quod constent ex cognitionibus, et contineant quiddam in se ratione constitutum et via.

1. Explain what is meant by *principia naturalia*; what other terms does Cicero employ for the same idea? What is the meaning of *notio, praeposita, reiecta, appetitio*, and *convenientia*? What technical language of the Stoic system do they translate? How does Cicero translate *πάθος*?

2. State briefly the position taken by Carneades, Aristippus, and Chrysippus with regard to the *summum bonum*.

II. 1. Give a brief account of the distinguished Romans to whom the poem of Lucretius, and Cicero's work 'De Finibus' were respectively dedicated.

2. What reason is there to believe that Cicero saw the poem of Lucretius before its publication?

3. What Roman writers of this period were most influenced by the scholars of Alexandria? What was the nature of this influence? Can their influence be traced in Lucretius?

4. Give in the form of a chronological table the chief events between B.C. 75 and B.C. 45.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1885.

LATIN LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt. D., LL.D.

PAPER *c*.

(Paper *b* for Senior Scholarships.)

Translate into Latin Prose:—

A. He argued that lenity and indulgence towards rebels were not only in themselves injurious to a power like Athens, but would now afford an example of levity which would destroy all the stability of the laws, and would stimulate the valour of clever and ambitious men to seek reputation by continually overthrowing what had been maturely resolved on the proposal of another. His opinion remained unchanged, and he could not conceive how any one who was not either seduced by the desire of displaying a perverse ingenuity, or swayed by mercenary motives, could question the justice and expediency of the decree. Mytilene had been guilty not simply of revolt, but of a malignant wanton conspiracy against an ally who had distinguished her among all her confederates by peculiar honours and privileges. As the offence was aggravated, the punishment ought to be severe. Nor was there any ground for making a distinction, which would only encourage offenders by supplying them with pretexts easily fabricated, between the class which had been active in the rebellion, and that which, by its acquiescence, had shown itself willing to share the risk of the enterprise, and had in fact cooperated with its authors.

[*Turn over.*

B. It is noble to be capable of resigning entirely one's own portion of happiness, or chances of it: but after all this self-sacrifice must be for some end. It is not its own end; and if we are told that its end is not happiness, but virtue, which is better than happiness, I ask, would the sacrifice be made if the hero or martyr did not believe that it would earn for others immunity from similar sacrifices? All honour to those who can abnegate for themselves the personal enjoyment of life, when by such renunciation they contribute worthily to increase the amount of happiness in the world; but he who does it, or professes to do it, for any other purpose, is no more deserving of admiration than the ascetic mounted on his pillar. He may be an inspiriting proof of what men can do; but assuredly he is not an example of what they should.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

I. *Translate*:—

(A.) Homer: Iliad, Book XVI. 633–651.

Τῶν δ' ὥστε δρυτόμων ἀνδρῶν ὀρυμαγδὸς ὄρωρεν
οὔρεος ἐν βήσσῃς, ἔκαθεν δέ τε γίγνετ' ἀκουή·
ὣς τῶν ὤρνυτο δοῦπος ἀπὸ χθονὸς εὐρυοδείης,
χαλκοῦ τε, ῥινοῦ τε, βοῶν τ' ἐῢ ποιητάων,
νυσσομένων ξίφεσίν τε καὶ ἔγχεσιν ἀμφιγύοισιν.
οὐδ' ἂν ἔτι φράδμων περ ἀνὴρ Σαρπηδόνα δῖον
ἔγνω, ἐπεὶ βελέεσσι, καὶ αἵματι, καὶ κονίῃσιν,
ἐκ κεφαλῆς εἴλυτο διαμπερὲς ἐς πόδας ἄκρους.
οἱ δ' αἰεὶ περὶ νεκρὸν ὁμίλεον, ὥς ὅτε μυῖαι
σταθμῷ ἔνι βρομέωσι περιγλαγέας κατὰ πέλλας,
ὥρῃ ἐν εἰαρινῇ, ὅτε τε γλάγος ἄγγεα δευει·
ὣς ἄρα τοὶ περὶ νεκρὸν ὁμίλεον. οὐδέ ποτε Ζεὺς
τρέψεν ἀπὸ κρατερῆς ὑσμίνης ὄσσε φαεινώ,
ἀλλὰ κατ' αὐτοὺς αἰὲν ὅρα, καὶ φράζετο θυμῷ
πολλὰ μάλ' ἀμφὶ φόνῳ Πατρόκλου μερμηρίζων,
ἢ ἤδη καὶ κεῖνον ἐνὶ κρατερῇ ὑσμίνῃ
αὐτοῦ ἐπ' ἀντιθέῳ Σαρπηδόνι φαίδιμος Ἕκτωρ
χαλκῷ δῃώσῃ, ἀπό τ' ὤμων τεύχε' ἕληται,
ἦ ἔτι καὶ πλεόνεσσιν ὀφέλλειεν πόνον αἰπύν.

(B.) Sophocles: Oedip. Colon. 1130–1147.

ΟΙ. *Καί μοι χέρ', ὦναξ, δεξιὰν ὄρεξον, ὡς*
ψαύσω φιλήσω θ' ᾗ θέμις, τὸ σὸν κάρα.
καίτοι τί φωνῶ; πῶς σ' ἂν ἄθλιος γεγὼς
θιγεῖν θελήσαιμ' ἀνδρὸς, ᾧ τις οὐκ ἔνι
κηλὶς κακῶν ξύνοικος; οὐκ ἔγωγέ σε,
οὐδ' οὖν ἐάσω. τοῖς γὰρ ἐμπείροις βροτῶν
μόνοις οἷόν τε συνταλαιπωρεῖν τάδε.
σὺ δ' αὐτόθεν μοι χαῖρε καὶ τὰ λοιπά μου
μέλου δικαίως, ὥσπερ ἐς τόδ' ἡμέρας.
ΘΗ. *οὔτ' εἴ τι μῆκος τῶν λόγων ἔθου πλέον.*
τέκνοισι τερφθεὶς τοῖσδε, θαυμάσας ἔχω,
οὔτ' εἰ πρὸ τοὐμοῦ προὔλαβες τὰ τῶνδ' ἔπη.
βάρος γὰρ ἡμᾶς οὐδὲν ἐκ τούτων ἔχει,
οὐ γὰρ λόγοισι τὸν βίον σπουδάζομεν
λαμπρὸν ποιεῖσθαι μᾶλλον ἢ τοῖς δρωμένοις.
δείκνυμι δ'. ὧν γὰρ ὤμοσ' οὐκ ἐψευσάμην
οὐδέν σε, πρέσβυ. τάσδε γὰρ πάρειμ' ἄγων
ζώσας, ἀκραιφνεῖς τῶν κατηπειλημένων.

(C.) Thucydides: Book VI. c. 78.

Καὶ εἴ τῳ ἄρα παρέστηκε τὸν μὲν Συρακόσιον, ἑαυτὸν δ' οὐ πολέμιον εἶναι τῷ 'Αθηναίῳ, καὶ δεινὸν ἡγεῖται ὑπέρ γε τῆς ἐμῆς κινδυνεύειν, ἐνθυμηθήτω οὐ περὶ τῆς ἐμῆς μᾶλλον, ἐν ἴσῳ δὲ καὶ τῆς ἑαυτοῦ ἅμα ἐν τῇ ἐμῇ μαχούμενος, τοσούτῳ δὲ καὶ ἀσφαλέστερον, ὅσῳ οὐ προδιεφθαρμένου ἐμοῦ ἔχων δὲ ξύμμαχον ἐμὲ καὶ οὐκ ἔρημος ἀγωνιεῖται· τόν τε 'Αθηναῖον μὴ τὴν τοῦ Συρακοσίου ἔχθραν κολάσασθαι, τῇ δ' ἐμῇ προφάσει τὴν ἐκείνου φιλίαν οὐχ ἧσσον βεβαιώσασθαι βούλεσθαι. εἴ τέ τις φθονεῖ μὲν ἢ καὶ φοβεῖται (ἀμφότερα γὰρ τάδε πάσχει τὰ μείζω), διὰ δὲ αὐτὰ τὰς Συρακούσας κακωθῆναι μὲν ἵνα σωφρονισθῶμεν βούλεται, περιγενέσθαι δὲ ἕνεκα τῆς αὐτοῦ ἀσφαλείας, οὐκ ἀνθρωπίνης δυνάμεως βούλησιν ἐλπίζει. οὐ γὰρ οἷόν τε ἅμα τῆς τε ἐπιθυμίας καὶ τῆς τύχης τὸν αὐτὸν ὁμοίως ταμίαν γενέσθαι.

(D.) **Demosthenes** : I. contra Aphobum, p. 832.

Τοσαύτης τοίνυν οὐσίας μοι καταλειφθείσης ὅσην ἐξ ἀρχῆς ἠκούσατε, καὶ τοῦ τρίτου μέρους πρόσοδον αὐτῆς φερούσης πεντήκοντα μνᾶς, ἐξὸν τούτοις ἀπληστοτάτοις οὖσι χρημάτων, καὶ εἰ μὴ μισθοῦν τὸν οἶκον ἠβούλοντο, ἀπὸ μὲν τούτων τῶν προσιόντων, ἐῶντας ὥσπερ εἶχε κατὰ χώραν, ἡμᾶς τε τρέφειν καὶ τὰ πρὸς τὴν πόλιν διοικεῖν, καὶ ὅσα ἐξ αὐτῶν περιεγίγνετο, ταῦτα προσπεριποιεῖν, τὴν δ' ἄλλην οὐσίαν ἐνεργὸν ποιήσασιν, οὖσαν ταύτης διπλασίαν, αὐτοῖς τε, εἰ χρημάτων ἐπεθύμουν, μέτρια ἐξ αὐτῶν λαβεῖν ἐμοί τε σὺν τοῖς ἀρχαίοις τὸν οἶκον ἐκ τῶν προσόδων μείζω ποιῆσαι, τούτων μὲν οὐδὲν ἐποίησαν, ἀποδόμενοι δ' ἀλλήλοις τὰ πλείστου ἄξια τῶν ἀνδραπόδων, τὰ δὲ παντάπασιν ἀφανίσαντες, ἐμοῦ μὲν ἀνεῖλον καὶ τὴν ὑπάρχουσαν πρόσοδον, σφίσι δ' αὐτοῖς οὐ μικρὰν ἐκ τῶν ἐμῶν κατεσκευάσαντο.

II. 1. *Translate, with notes upon the syntax* :—

(α) οὔτ' ἂν δυναίμην, μήτ' ἐπισταίμην λεγειν.

(β) τί δῆτα μέλλεις μὴ οὐ γεγωνίσκειν τὸ πᾶν;

(γ) σημανθέντων τῷ Ἀστυάγει ὅτι πολέμιοί εἰσιν ἐν τῇ χώρᾳ.

(δ) ἀπεβλέψατε πρὸς ἀλλήλους ὡς αὐτὸς μὲν ἕκαστος οὐ ποιήσων, τὸν δὲ πλησίον πράξοντα.

(ε) προσήκει χάριν αὐτοὺς ἔχειν ὧν ἐσώθησαν ὑφ' ὑμῶν.

2. Classify the constructions used in final clauses in Greek, with illustrations.

3. Discuss the use of the article in Homer, noting carefully the usages which would not be permissible in Attic Greek.

4. Give the Attic forms in use from *ἰέναι* and *παίειν*. What is the rule for the inflexion of *λούω*?

5. Sketch in outline the history of lyric poetry in Greece, and show how it was affected by political conditions.

6. To what extent may the history of Athens be regarded as instructive for modern democracies? Examine any instances of action which has been regarded as characteristic of a popular assembly.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *b*.

I. 1. *Translate*:—

(A.) Aristophanes: Clouds, 329–339.

ΣΩΚ. *ταύτας μέντοι σὺ θεὰς οὔσας οὐκ ᾔδης, οὐδ' ἐνόμιζες ;*
ΣΤΡ. *μὰ Δί', ἀλλ' ὁμίχλην καὶ δρόσον αὐτὰς ἡγούμην καὶ καπνὸν εἶναι.*
ΣΩΚ. *οὐ γάρ, μὰ Δί', οἶσθ' ὁτιὴ πλείστους αὗται βόσκουσι σοφιστάς,*
θουριομάντεις, ἰατροτέχνας, σφραγιδονυχαργοκομήτας,
κυκλίων τε χορῶν ᾀσματοκάμπτας, ἄνδρας μετεωροφένακας·
οὐδὲν δρῶντας βόσκουσ' ἀργούς, ὅτι ταύτας μουσοποιοῦσι.
ΣΤΡ. *ταῦτ' ἄρ' ἐποίουν ὑγρᾶν νεφελᾶν στρεπταιγλᾶν δάϊον ὁρμάν,*
πλοκάμους θ' ἑκατογκεφάλα Τυφῶ, πρημαινούσας τε θυέλλας;
εἶτ' ἀερίας, διεράς, γαμψοὺς οἰωνούς, ἀερονηχεῖς,
ὄμβρους θ' ὑδάτων δροσερᾶν Νεφελᾶν. εἶτ' ἀντ' αὐτῶν, κατέπινον
κεστρᾶν τεμάχη μεγαλᾶν, ἀγαθᾶν, κρέα τ' ὀρνίθεια κιχηλᾶν.

(B.) Aristophanes: Wasps, 765–775.

ΒΔΕΛ. *ἐκεῖσε μὲν μηκέτι βάδιζ', ἀλλ' ἐνθάδε*
αὐτοῦ μένων, δίκαζε τοῖσιν οἰκέταις.
ΦΙΛ. *περὶ τοῦ ; τί ληρεῖς ;*

ΒΔΕΛ. ταῦθ' ἅπερ ἐκεῖ πράττεται.
ὅτι τὴν θύραν ἀνέῳξεν ἡ σηκὶς λάθρα,
ταύτης ἐπιβολὴν ψηφιεῖ μίαν μόνην.
πάντως γε κἀκεῖ ταῦτ' ἔδρας ἑκάστοτε.
καὶ ταῦτα μέν νυν εὐλόγως, ἢν ἐξέχῃ
εἵλη κατ' ὄρθρον, ἡλιάσει πρὸς ἥλιον·
ἐὰν δὲ νίφῃ, πρὸς τὸ πῦρ καθήμενος,
ὕοντος, εἴσει· κἂν ἔγρῃ μεσημβρινός,
οὐδεὶς σ' ἀποκλείσει Θεσμοθέτης τῇ κιγκλίδι.

2. *Translate, with brief notes on allusions or constructions* :—

(*a*) Birds, 685–692.

Ἄγε δὴ φύσιν ἄνδρες ἀμαυρόβιοι, φύλλων γενεᾷ προσόμοιοι,
ὀλιγοδρανέες, πλάσματα πηλοῦ, σκιοειδέα φῦλ' ἀμενηνά,
ἀπτῆνες ἐφημέριοι, ταλαοὶ βροτοί, ἀνέρες εἰκελόνειροι,
προσέχετε τὸν νοῦν τοῖς ἀθανάτοις ἡμῖν, τοῖς αἰὲν ἐοῦσι,
τοῖς αἰθερίοις, τοῖσιν ἀγήρῳς, τοῖς ἄφθιτα μηδομένοισιν,
ἵν' ἀκούσαντες πάντα παρ' ἡμῶν ὀρθῶς περὶ τῶν μετεώρων,
φύσιν οἰωνῶν, γένεσίν τε θεῶν, ποταμῶν τ', Ἐρέβους τε, Χάους τε,
εἰδότες ὀρθῶς παρ' ἐμοῦ Προδίκῳ κλάειν εἴπητε τολοιπόν.

(*β*) Birds, 1076–1080.

Βουλόμεσθ' οὖν νῦν ἀνειπεῖν ταῦτα χ' ἡμεῖς ἐνθάδε.
ἢν ἀποκτείνῃ τις ὑμῶν Φιλοκράτη τὸν Στρούθιον,
λήψεται τάλαντον· ἢν δὲ ζῶντά γ' ἀγάγῃ, τέτταρα·
ὅτι συνείρων τοὺς σπίνους, πωλεῖ καθ' ἑπτὰ τοῦ 'βολοῦ,
εἶτα φυσῶν τὰς κίχλας, δείκνυσι καὶ λυμαίνεται,
τοῖς τε κοψίχοισιν εἰς τὰς ῥῖνας ἐγχεῖ τὰ πτερά,
τὰς περιστεράς θ' ὁμοίως ξυλλαβών, εἶρξας ἔχει,
κἀπαναγκάζει παλεύειν δεδεμένας ἐν δικτύῳ.

(*γ*) Peace, 632–640.

Κᾆτα δ', ὡς ἐκ τῶν ἀγρῶν ξυνῆλθεν οὑργάτης λεώς,
τὸν τρόπον πωλούμενος τὸν αὐτὸν οὐκ ἐμάνθανεν,
ἀλλ', ἅτ' ὢν ἄνευ γιγάρτων, καὶ φιλῶν τὰς ἰσχάδας,
ἔβλεπεν πρὸς τοὺς λέγοντας· οἱ δὲ γιγνώσκοντες εὖ
τοὺς πένητας ἀσθενοῦντας, κἀποροῦντας ἀλφίτων,
τήνδε μὲν δικροῖς ἐώθουν τὴν θεὸν κεκράγμασι,

πολλάκις φανεῖσαν αὐτὴν τῆσδε τῆς χώρας πόθῳ·
τῶν δὲ συμμάχων ἔσειον τοὺς παχεῖς καὶ πλουσίους,
αἰτίας ἂν προστιθέντες, ὡς φρονοῖ τὰ Βρασίδου.

II. 1. *Translate*:—Plato: Phaedo, p. 101 B–D.

Τί δέ; ἑνὶ ἑνὸς προστεθέντος τὴν πρόσθεσιν αἰτίαν εἶναι τοῦ δύο γενέσθαι ἢ διασχισθέντος τὴν σχίσιν οὐκ εὐλαβοῖο ἂν λέγειν; καὶ μέγα ἂν βοῴης ὅτι οὐκ οἶσθα ἄλλως πως ἕκαστον γιγνόμενον ἢ μετασχὸν τῆς ἰδίας οὐσίας ἑκάστου οὗ ἂν μετάσχῃ, καὶ ἐν τούτοις οὐκ ἔχεις ἄλλην τινὰ αἰτίαν τοῦ δύο γενέσθαι ἀλλ' ἢ τὴν τῆς δυάδος μετάσχεσιν, καὶ δεῖν τούτου μετασχεῖν τὰ μέλλοντα δύο ἔσεσθαι, καὶ μονάδος ὃ ἂν μέλλῃ ἓν ἔσεσθαι, τὰς δὲ σχίσεις ταύτας καὶ προσθέσεις καὶ τὰς ἄλλας τὰς τοιαύτας κομψείας ἐῴης ἂν χαίρειν, παρεὶς ἀποκρίνασθαι τοῖς ἑαυτοῦ σοφωτέροις· σὺ δὲ δεδιὼς ἄν, τὸ λεγόμενον, τὴν ἑαυτοῦ σκιὰν καὶ τὴν ἀπειρίαν, ἐχόμενος ἐκείνου τοῦ ἀσφαλοῦς τῆς ὑποθέσεως, οὕτως ἀποκρίναιο ἄν. εἰ δέ τις αὐτῆς τῆς ὑποθέσεως ἔφοιτο, χαίρειν ἐῴης ἂν καὶ οὐκ ἀποκρίναιο, ἕως ἂν τὰ ἀπ' ἐκείνης ὁρμηθέντα σκέψαιο, εἴ σοι ἀλλήλοις συμφωνεῖ ἢ διαφωνεῖ.

2. Expound the principle here illustrated, and show how it bears upon the main thesis of the Phaedo.

3. Give in outline the argument by which Plato endeavours to establish the prior existence of the soul.

III. 1. *Translate*:—Plato: Theaetetus, p. 179 E–180 B.

Ἀτεχνῶς γὰρ κατὰ τὰ συγγράμματα φέρονται, τὸ δ' ἐπιμεῖναι ἐπὶ λόγῳ καὶ ἐρωτήματι καὶ ἡσυχίως ἐν μέρει ἀποκρίνασθαι καὶ ἐρέσθαι ἧττον αὐτοῖς ἔνι ἢ τὸ μηδέν· μᾶλλον δὲ ὑπερβάλλει τὸ οὐδ' οὐδὲν πρὸς τὸ μηδὲ σμικρὸν ἐνεῖναι τοῖς ἀνδράσιν ἡσυχίας· ἀλλ' ἄν τινά τι ἔρῃ, ὥσπερ ἐκ φαρέτρας ῥηματίσκια αἰνιγματώδη ἀνασπῶντες ἀποτοξεύουσιν, κἂν τούτου ζητῇς λόγον λαβεῖν, τί εἴρηκεν, ἑτέρῳ πεπλήξει καινῶς μετωνομασμένῳ, περανεῖς δὲ οὐδέποτε οὐδὲν πρὸς οὐδένα αὐτῶν· οὐδέ γε ἐκεῖνοι αὐτοὶ πρὸς ἀλλήλους ἀλλ' εὖ πάνυ φυλάττουσι τὸ μηδὲν βέβαιον ἐᾶν εἶναι μήτ' ἐν λόγῳ μήτ' ἐν ταῖς αὐτῶν ψυχαῖς, ἡγούμενοι, ὡς ἐμοὶ δοκεῖ, αὐτὸ στάσιμον εἶναι· τούτῳ δὲ πάνυ πολεμοῦσιν, καὶ καθ' ὅσον δύνανται πανταχόθεν ἐκβάλλουσιν.

2. What school of philosophers is described in the last extract? State their main doctrine, and the manner in which Sokrates deals with it.

3. What are the conclusions which Plato arrives at in this dialogue as to the definition of knowledge? What objects does he achieve in the course of his discussion?

4. *Translate, with notes* :—Theaet. p. 148.

Ὅσαι μὲν γραμμαὶ τὸν ἰσόπλευρον καὶ ἐπίπεδον ἀριθμὸν τετραγωνίζουσι, μῆκος ὡρισάμεθα, ὅσαι δὲ τὸν ἑτερομήκη, δυνάμεις, ὡς μήκει μὲν οὐ ξυμμέτρους ἐκείναις, τοῖς δ' ἐπιπέδοις ἃ δύνανται. καὶ περὶ τὰ στερεὰ ἄλλο τοιοῦτον.

[*Candidates are recommended to answer one or two questions fully rather than to attempt a brief treatment of all.*]

IV. 1. Examine how far the comedy of 'The Birds' had a serious political purpose.

2. Discuss the correctness with which Aristophanes has represented the character of *either* Kleon *or* Sokrates, comparing our other authorities.

3. Trace the steps by which Athens rose again after her capture by the Lacedaemonians.

4. Give some account of the statesmen contemporary with Demosthenes, and the policy which they respectively advocated.

5. What schools of philosophy took their rise from the teaching of Sokrates? Name their leading adherents, and give in outline their principal doctrines.

6. Sketch the relations of Greece with Persia during the time between the time of Perikles and the death of Philip.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *c.*

(Paper *b* for Senior Scholarships.)

Translate into Greek (*with accents*):—

A. After a short rest, Alexander advanced into the plain to rejoin his generals, who had by this time completed the bridge, and having crossed the river, proceeded by forced marches toward Persepolis. His speed was quickened by a letter which he received on the road from Tiridates, the governor of the city, offering to surrender the treasures, but expressing his fears that he should not be able long to preserve it from plunder. As he approached the capital, he is said to have been met by a multitude of Greeks, who had been transported, it seems, from Asia Minor—for what offence is not recorded—and had been barbarously mutilated. The fact itself, though omitted by Arrian, is consistent enough with Persian usages to be perfectly credible, and perhaps had some connexion with the events that followed; for Alexander, though he met with no resistance, and found the treasure untouched, permitted his soldiers to plunder the city, which seems to have surpassed both Babylon and Susa, as well in the opulence of its inhabitants as in the hoard of the crown.

[*Turn over.*

B. Political philosophy, according to Plato, is the history of those changes which the will of man produces in the matter of government and laws, and an endeavour to limit these changes by restoring in the social world the primitive order and rule. Education is the means by which those changes are counteracted. It avails itself of that principle of contrariety by which all changes are carried on, and endeavours to expel the evil by inducing the good. The process by which it carries on this effect is a discipline of the intellect, prescribed by the state, and promoted by all its institutions and customs, formed, as these are supposed to be, after the idea of the sovereign good. That discipline lays down a course of exercise for the body as well as for the intellect, that the body may be brought into the best condition in order to the exercise of the intellect.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, AND FOR SENIOR SCHOLARSHIPS, 1885.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: Prof. HENRY MORLEY, LL.D.

PAPER *a*.

1. Point out some of the chief differences in vocabulary and in grammatical forms between First English or Anglo-Saxon, and the English of the present day.

2. Account for the existence of three dialects in Early English. How were they to be distinguished from one another by the form of the plural in the Present Indicative, and by the form of the Present Participle?

3. Explain the terms *Ablaut* and *Umlaut*.

4. Give an example of each of the nine cases of mutation of sound in accordance with Grimm's Law.

5. Classify the Strong Verbs.

6. Give some account of the successive stages of the introduction of words from the Latin into our vocabulary.

[*Turn over.*

7. Discuss the structure of each of these words as minutely as you can :—***starvation, bicycle, undress, handkerchief, burglar, parcel, sauce, summons, since.***

8. Write a few notes of your own upon this piece of early English :—

"Laverd, oure Laverd, hou selkouth is
Name þine in all land þis.
For upe-hoven es þi mikelhade
Over hevens þat ere brade;
Of mouth of childer and soukand
Made þou lof in ilka land."

9. Write a few notes on the place of Layamon's 'Brut' (*a*) in the history of our literature and (*b*) in the history of our language.

10. Describe any references to himself that are to be found in Chaucer's 'Canterbury Tales' or in his other poems.

11. Write a note or two on differences between Chaucer's English and the English of 'the Vision of Piers Plowman.'

12. In what year was Shakespeare writing plays? Who were our chief dramatists when he first came to London? What was the condition of our stage when his last plays were being written?

13. Write a few notes on the relation of Milton's 'Paradise Lost' to the time when it was written.

14. Write a few notes on the relation of Cowper's 'Task' to the time when it was written.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

ENGLISH LANGUAGE AND LITERATURE.

PAPER *b*.

Examiner: Prof. Henry Morley, LL.D.

1. Trace the influence of the French Revolution upon the mind of Wordsworth as told by him in his poem called 'The Prelude.'

2. Show the relation of Campbell's 'Pleasures of Hope' to the aspirations of the time following the French Revolution. In what year was Campbell's poem published, and what was his age in that year?

3. Show how the movement of thought associated with the French Revolution touched the minds of Coleridge and Southey in their youth.

4. Tell briefly the story of Sir Walter Scott's life from the year 1826.

5. Give some account of the life of Thomas Carlyle at the time when he was writing 'Sartor Resartus.' When and in what way was that book first published? What was its aim?

6. Give some account of Browning's 'Paracelsus,' or of any one of his plays.

[*Turn over.*

7. When did Alfred Tennyson publish his 'In Memoriam'? Tell the occasion of that poem; describe its aim and character, and show its relation to the spirit of our time.

8. Give the date of the first edition of Francis Bacon's Essays, also of the second and of the last edition published by himself. How many Essays were in the first edition? How many were in the last edition?

9. Describe the plan and discuss the spirit of any one of Bacon's Essays.

10. What connection can you find between Bacon's 'New Atlantis' and Bacon's writings on philosophy?

11. Describe what you consider to be the main features of 'the Faerie Queene,' having regard to Spenser's indication of his whole design, and to the part that was written.

12. What references are there in the fifth book of the Faerie Queene to the questions of Communism, Rights of Women, sentence on Mary Queen of Scots, Spanish rule in the Low Countries, and the abjuration of his faith by Henri Quatre?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

ENGLISH LANGUAGE AND LITERATURE.

Examiner: Prof. HENRY MORLEY, LL.D.

PAPER *c*.

Write an essay on "The Tendencies of English Literature during the former half of the Nineteenth Century."

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

POLITICAL SCIENCE.

Examiners: { Rev. W. Cuningham, D.Sc., B.D.
W. A. Hunter, M.A., LL.D.

PAPER *a.* History of Europe, 1790–1850.

1. Give some account of the Baron vom Stein's measures of reform; and compare them with changes which had already taken place in other European countries.

2. Describe briefly the attitude of the various European nations towards France (*a*) after the execution of Louis XVI., (*b*) when Buonaparte was created Consul for life.

3. Explain the arrangements which were made at the third partition of Poland; discuss how far that transaction has proved advantageous to the various parties concerned in it.

4. Give some account of the constitution of the German Empire and of the character of the Confederation which arose when it was dissolved.

5. Discuss carefully the objects of Napoleon's expedition to Russia, and describe briefly its results.

[*Turn over.*

6. Explain clearly the nature and results of French and of English intervention in Spain between 1800 and 1813.

7. Give some account of the origin and importance of the Greek War of Independence.

8. Write a short history of Europe in the year 1830, and trace any lines of connexion between the different revolutionary movements of that time.

9. Give an account of the policy and early years of the Pontificate of Pope Pius IX., and describe the nature of the parties against which he had to contend.

10. Explain the nature of the political influence of (*a*) Fichte (*b*) Cobden, (*c*) Talleyrand.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1885.

POLITICAL SCIENCE.

PAPER *b*. POLITICAL ECONOMY.

Examiners: { W. A. HUNTER, M.A., LL.D.
Rev. W. CUNINGHAM, D.Sc., B.D.

1. Is Political Economy a science or an art, and what is its method? Answer with reference to the treatment adopted by Adam Smith, Ricardo, and Cliffe Leslie respectively.

2. What are the chief differences between money and other forms of wealth? How far do these differences account for or excuse the doctrines of the Mercantilists?

3. Mill analyses profit into insurance, interest, and wages of management. Discuss the completeness and convenience of this analysis. Which of these various elements is tending towards a minimum, and to what causes is this tendency due?

4. Explain carefully the conditions of English Agriculture at the time when Ricardo formulated his theory of Rent. Restate that theory so as to apply to house property.

5. Discuss fully the advantages and disadvantages of raising money for national emergencies by taxation within the year, or by loans for long or short periods.

[*Turn over.*

6. Investigate the economic reasons which helped to determine the colonial policy of different nations, ancient and modern.

7. Examine the immediate and ultimate effects of the introduction of machinery in the textile trades on the rates of wages, the intensity of labour, and continuity of employment.

8. Discuss the probability of an appreciation of gold. Supposing it occurred, how would it tend to affect the opportunities of employment and the real wages of the working classes ?

9. Show carefully in what ways the raising of the Bank Rate tends to affect the exchanges between England and other countries, and the amount of the reserve in the Bank of England.

10. Distinguish Socialism and Communism, and discuss how far any recent legislation in England can be properly described as socialistic or as communistic.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

POLITICAL SCIENCE.

PAPER *c*. JURISPRUDENCE.

Examiners: W. A. Hunter, M.A., LL.D.
Rev. W. Cuningham, D.Sc.

1. Define "Political Society." What is the importance of the definition for Jurisprudence?

2. Trace the origin of Court Fees. State and examine Bentham's objections to this mode of paying for the administration of justice.

3. What distinctions have been suggested between "civil injury" and "crime"? Criticize them.

4. State and exemplify from the history of England and of the United States the meaning of the term "unconstitutional."

5. "Positive law (or *jus*), positive morality (or *mos*), together with the principles which form the text of both, are the inseparably connected parts of a vast organic whole." Comment on this statement.

6. Discuss the propriety of employing a great variety of pnishments for crime.

7. Explain and illustrate the different cases in which the phrase "legal fiction" is employed.

8. Exemplify from different systems of law the priority of "self-help" to judicial remedies.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

JURISPRUDENCE AND CONSTITUTIONAL HISTORY.

Examiner: W. A. Hunter, M.A., LL.D.

PAPER *a*. Constitutional History.

1. Give an account of the legislation against Roman Catholics in the reign of Elizabeth.

2. Describe the steps taken by the feudal tenants of the Crown, during the Commonwealth and the reign of Charles II., to get rid of the feudal burdens attached to their estates.

3. Enumerate and explain the relative importance of the several sources of national revenue in the reign of Henry VII.

4. State the provisions of the statutes *De Donis conditionalibus* and *Quia Emptores*, and explain their importance in relation to the position of the feudal aristocracy.

5. Give a historical sketch of the judicial power of the Lords.

[*Turn over*.

6. Describe the ancient tenures of tanistry and gavelkind as they existed in Ireland, prior to the reign of James I. How were they abolished?

7. Give an account of the legislation affecting labourers in the 14th century.

8. State succinctly the law as to the liability, civil and criminal, of a governor of a dependency, (1) in the courts of the dependency, and (2) in the courts in England.

9. What was the dispute in Bates's case? State the arguments advanced on both sides.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, AND FOR SENIOR SCHOLARSHIPS, 1885.

MATHEMATICS.

PAPER *a*. GEOMETRY AND CONIC SECTIONS.

Examiner: Prof. C. NIVEN, F.R.S.

1. The complements of the parallelograms which are about the diagonal of a parallelogram are equal to one another.
Determine when the complements will be the greatest possible.

2. In any triangle the square on the side opposite an acute angle is less than the sum of the squares on the sides enclosing the acute angle.
Find the locus of a point P such that, A, B, C being three given points, AP^2, BP^2, CP^2 may be in arithmetical progression.

3. A circle being given, it is required to determine its centre.
If a chord AB of a circle divide it into two segments ACB, ADB, and the latter be doubled over AB, so as to come into the position AC′B, and if lines be drawn at right angles to AB to cut these segments AC′B, ADB; show that the lengths intercepted by them are always the same.

[*Turn over.*

4. Describe a figure which shall be similar and similarly situated to a given rectilineal figure.

The pantagraph consists of a rhombus ABCD jointed at the angles, and moveable freely about a point O in BC. The tracer is fixed in some point Q in AD produced, and the pencil is fixed in the point P where QO produced meets AB produced. Prove (1) that OP : OQ in a constant ratio, (2) that POQ is a straight line however the rhombus may alter in shape, and (3) that P and Q describe similar figures.

5. If a straight line which meets a plane be at right angles to two straight lines in the planes cutting it, it will be at right angles to every straight line in the plane.

6. Find the equation of a straight line passing through a given point, and parallel to a given straight line.

Find the locus of each of the following equations:—

$$(1)\ 2x-3y=1, \qquad (2)\ \frac{\sqrt{2}}{r}=\cos\left(\theta+\frac{3\pi}{4}\right),$$

$$(3)\ (x-2)^2-3(x-2)y+2y^2=0,$$

and the length of the perpendicular from the intersection of the two members of (3) upon (1).

7. Obtain the equation of the tangent to a circle at any point.

Find the length of the chord of intersection of the lines

$$x^2+y^2+x-4y-\tfrac{3}{4}=0 \text{ and } 2x+y-1=0.$$

8. If the normal at P to an ellipse whose foci are S,H meet SH in G, prove that SG : HG : : SP : HP.

9. Find the equation of the chord of contact of tangents drawn to a parabola from any point T.

If the middle point of the chord of contact lie on a straight line, find the locus of T.

10. Find the polar equation of the ellipse or hyperbola, the focus being the pole.

Prove that any focal chord is a third proportional to the transverse axis and the parallel diameter.

11. Find the locus of the intersections of perpendiculars from the angles on the opposite sides of triangles which stand on a given base and have a given area.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS AND FOR SENIOR SCHOLARSHIPS, 1885.

MATHEMATICS.

PAPER *b*. ALGEBRA, TRIGONOMETRY, &c.

Examiner: Prof. C. NIVEN, F.R.S.

1. Determine when $x^n + a^n$ is divisible by $x + a$.

Find the values of A and B that $x^n - Ax^2 + B$ may be divisible without remainder by $x^2 - x - 2$.

2. Assuming the Binomial Theorem true for a positive integral index, prove it true generally.

Prove that, squares and products of x, y above the second degree being neglected,

$$\frac{(1-x)^{-\frac{1}{2}} + (1-y)^{-\frac{1}{2}}}{(1-x)^{\frac{1}{2}}(1-y)^{\frac{1}{2}}} = 2 + \frac{3}{2}(x+y) + \frac{11x^2}{8} + xy + \frac{11y^2}{8}.$$

3. State and prove the principle of proportional parts for logarithmic tables.

Prove that

$$\frac{x^2}{1\,.\,3} + \frac{x^4}{3\,.\,5} + \frac{x^6}{5\,.\,7} + \ldots \text{ to } \infty = \frac{1}{4} + \frac{x^2-1}{4x}\log_e\frac{1+x}{1-x},$$

x being < 1.

4. Sum the series

$$1^2\,.\,2 + 2^2\,.\,3 + 3^2\,.\,4 + \ldots \text{ to } n \text{ terms};$$

$$1\,.\,2x + 2\,.\,3x^2 + 3\,.\,4x^3 + \ldots \text{ to } \infty.$$

[*Turn over.*

5. Investigate the solution of the triangle in which A, a, c are given.

Find the distance between the centres of the circles inscribed in the two triangles satisfying the given conditions in terms of A, a, c.

6. Investigate Demoivre's Theorem, finding *all* the values of

$$(\cos\theta+\sqrt{-1}\sin\theta)^{\frac{m}{n}}.$$

If $$u=a+b\sqrt{-1},\quad v=p+q\sqrt{-1},$$
find the imaginary part of $\log_e(u-v)$.

7. Find any series suitable for the calculation of π.

Show that

$$\tan^{-1}\frac{1}{2\,.\,1^2}+\tan^{-1}\frac{1}{2\,.\,2^2}+\ldots \text{ to } n \text{ terms} = \tan^{-1}(1+2n)-\frac{\pi}{4}.$$

8. Sum the series

$$\cos\theta\cos\phi+\frac{\cos 2\theta\cos 2\phi}{1\,.\,2}+\frac{\cos 3\theta\cos 3\phi}{1\,.\,2\,.\,3}+\ldots$$

9. Investigate the complete conditions for a maximum or minimum value of a function of one independent variable.

Examples:

$$(x-3)^3(x-2)^2,\quad \frac{\sqrt{1+x^2}}{1+x}.$$

10. Investigate the formula for integrating by parts.

Integrate the following expressions:—

$$\frac{2x-1}{x^2-4x+3},\quad \frac{x}{\sqrt{1-x-x^2}},\quad x^3\sin^{-1}x.$$

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

MATHEMATICS.

PAPER *c*. Differential and Integral Calculus.

Examiner: Prof. C. Niven, F.R.S.

1. Investigate the differential coefficient of $\cos x$, and differentiate

$$\log_e \sin(a^2 - x^2), \quad \tan^{-1}\frac{1}{2}\left(x - \frac{1}{x}\right).$$

2. State and prove Leibnitz's Theorem.
Assuming that

$$x\frac{d^2y}{dx^2} + (2n+1)\frac{dy}{dx} + a^2xy = 0,$$

and that

$$y = 1 \text{ and } \frac{dy}{dx} = 0 \text{ when } x = 0,$$

ind the value of

$$\frac{d^ny}{dx^n} \text{ when } x = 0.$$

3. State and prove Taylor's Theorem, including the expression for the remainder after n terms.

Expand $e^{\tan^{-1}x}$ to 4 terms.

4. Find the ellipse of greatest area which can be inscribed in a given isosceles triangle, so as to have one axis coinciding with the line which bisects the vertical angle of the triangle.

5. Given $\phi(x, y)=0,$

find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}.$

If $x=f(y, z), \quad y=\phi(x, z),$

find $\frac{dy}{dx}, \frac{d^2y}{dx^2}.$

6. If ϕ be the angle between a curve and the radius vector at any point, prove that $\tan\phi=r\frac{d\theta}{dr}$. Find also the polar equation of the tangent.

In the curve $r^2=a^2 \sin 2\theta$, the tangent at P meets the initial line Sx in T, and PN is perpendicular to Sx. Prove that

$$SP . ST=2PT . SN.$$

7. Find the asymptotes of the following curves :—

$$y^2(x-a)(x-3a)=x^3(x-2a);$$

$$x^2(x-y)+a^2(x+y)=0.$$

Trace the curves.

8. Prove that the locus of the centres of curvature of a curve is the envelope of its normals. Why is this locus called the evolute?

Find the evolute of the parabola.

9. Find the following integrals :—

$$\int \sqrt{x^2+5}\,dx, \quad \int \frac{\sin^4\theta}{a^2+\sin^2\theta}\,d\theta, \quad \int_0^1 \frac{x}{\sqrt{2-x-x^2}}\,dx.$$

10. Find the length of the arc of the curve

$$\sqrt{x}+\sqrt{y}=\sqrt{a}$$

between the axes of coordinates.

11. Solve the differential equations

$$x\left(\frac{dy}{dx}\right)^2+y=a\left(\frac{dy}{dx}\right)^2;$$

$$\frac{d^2y}{dx^2}-\frac{dy}{dx}-2y=\sin x;$$

and find the curve in which the subnormal is equal to the sum of the ordinate and abscissa.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

MATHEMATICS.

PAPER *d*. MECHANICS.

Examiner: Prof. C. NIVEN, F.R.S.

1. State the Second Law of Motion, and explain its relation to the parallelogram of forces, and to the definition of the unit of force.

Three equal spheres of radius a are suspended from the same point by strings of equal length b, and hang in a vertical plane: prove that the tensions of the two outside strings are each equal to the weight (W) of a sphere, and that the pressure between each two spheres : W : : $2a : a+b$.

2. Find the conditions of equilibrium of a rigid body under a system of forces in one plane, and show that they will be satisfied if the sum of the moments about 3 points not in the same straight line separately vanish.

Show that any force in the plane of a given triangle may be resolved into 3 forces acting along the sides of the triangle; hence show that if L_1, L_2, L_3 be the sums of the moments of a system of forces in one plane about three points A, B, C, in the plane of the forces, the sum of the moments about any fourth point in the plane is $(a\alpha L_1 + b\beta L_2 + c\gamma L_3) | 2\Delta$, where $\alpha\beta\gamma$ are the perpendiculars from the fourth point on the sides of the triangle A B C, a, b, c its sides, and Δ its area.

3. Explain generally how you would deal with the equilibrium of a statical system consisting of a number of jointed rods.

A rhombus is formed of four weightless rods jointed freely at the angles, the opposite angles being joined by elastic strings cut from the same uniform piece. Assuming Hooke's Law

[*Turn over.*

that the extension of a string varies as the stretching force, prove that if λ, λ' be the lengths of these strings in the position of equilibrium, l, l' their unstretched lengths, then $\frac{1}{\lambda} - \frac{1}{\lambda'} = \frac{1}{l} - \frac{1}{l'}$.

4. Find the equation of the curve in which a heavy uniform string, attached to two fixed points, will hang.

A and B are two points in the same horizontal plane, and a string attached to A passes over a small pulley at B and hangs vertically, the weight of the vertical part B C being sufficient to keep the other part A B nearly straight: prove that if D be the distance of the middle point of the string below the straight line A B, $8\,D \,.\, BC = AB^2$, nearly.

5. Find the mechanical efficiency of a screw, on the supposition that the threads are smooth.

Why is it impossible to withdraw a screw nail without unscrewing it?

6. Find the law of force under which a body will describe a parabola, the force being constantly perpendicular to the axis of the curve.

A particle moves uniformly in an ellipse, find the components of the force which act upon it at every instant.

7. A body moves in a plane curve, find the acceleration along the radius vector.

A rod O A, movable in a vertical plane about O, revolves with uniform angular velocity ω from the vertical to the horizontal position, while a smooth ring under the influence of gravity moves from rest at A towards O: show how to find the motion of the ring.

8. Obtain the equation of a central orbit $\frac{d^2u}{d\theta^2} + u = \frac{P}{h^2u^2}$.

If the angular velocity of a particle describing an orbit about a centre of force be inversely proportional to the velocity, show that the equation to the path is $r^3 \sin 3\theta = a^3$.

9. A body moves, under gravity, on the arc of a smooth vertical curve, find the velocity at any point of the motion and the pressure on the curve.

A particle slides from the top of a smooth vertical circular hoop, find where it will leave the curve.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

MATHEMATICAL PHYSICS.

PAPER *e* (1). HEAT.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Equal masses of ice and of ice-cold water are enclosed together within a vessel impervious to heat, the whole being at 0°. State and discuss quantitatively what will happen (*a*) when the pressure is indefinitely diminished, (*b*) when the pressure is indefinitely increased.

2. Define an isothermal line and an isothermal surface. Show that if a gas changes its volume without undergoing any change of temperature, the quantities of heat emitted are in arithmetical progression, whilst the volumes are in a geometrical progression.

3. Deduce the law of Boyle from the kinetic theory of gases.

4. Give an outline of the chief points in Fourier's theory of the conduction of heat.

5. A hollow spherical shell has inner and outer radii r and r' respectively, the inner and outer surfaces being maintained

[*Turn over.*

at absolute temperatures T and T' respectively. Suppose the specific conductivity of the material of the shell to be inversely proportional to its absolute temperature. Find the variations of temperature (in the steady distribution) along any radius between the outer and the inner surface. Does it make any difference in the internal distribution whether the inner or the outer surface be the hotter?

6. A hollow wire is heated by having an electric current passed through it, the strength of the current being caused to vary in a simple periodic manner, such as is represented by the equation

$$i = \mathrm{I} \sin 2\pi\frac{t}{\mathrm{T}},$$

where I is the maximum strength of current, and T the period of the variations. Assuming that Newton's law of cooling is true, that the value for the coefficient of surface emission of heat is constant, and that the electric resistance of the wire is directly proportional to the absolute temperature, obtain an expression for the fluctuations in the temperature of the wire.

7. How do you explain the existence of a difference between the specific heat of the air, as measured when heated without being allowed to expand and when heated while being allowed to expand without mechanical constraint other than that of the external atmospheric pressure? Is any such difference observed in the case of water, or of ice?

8. How do you account for the following facts? A large glass globe full of air is connected to a manometer, and also is provided with a large stop-cock opening into the air. Some air having been pumped out of the globe the manometer gauge shows a certain reduction of internal pressure. The stop-cock is then opened for an instant, and then closed again. The pressure during this operation returns to that of the external atmosphere, but a few seconds after closing the stop-cock a reduction of internal pressure is again observed, though of a less amount than had existed before opening the cock.

9. Why do a pound of ice-cold water and a pound of boiling water when mixed together not give 50° C as the resulting temperature?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER *e* (2). LIGHT.

Examiner: PROF. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Let two media of different refrangibility be separated by a spherical surface. Let a pencil of rays emanate from a point in one medium, and let the distance of the focus of the incident pencil from the principal focus for the first medium be called d, and the distance of the focus of the refracted pencil from the principal focus for the second medium be called d', and let the principal focal lengths for the first and second media be called f and f' respectively; prove that

$$dd' = ff'.$$

2. When the flat bottom of a dish or other vessel is viewed through a parallel water-surface it appears deeper at the point immediately below the eye than at other points. Discuss and explain this.

3. Two media are separated by a plane surface. Show that to an eye situated in the more highly refringent medium at a distance a from the surface a solid can be presented which, as viewed through the surface, shall appear as a flat plane parallel to the surface at a distance b beyond it; and show further that this solid will be an ellipsoid of revolution lying within the critical cone of rays, the ellipsoid having as the values of its semi-axes $\frac{a+b}{\sqrt{\mu^2-1}}$ and $\frac{b}{\mu}$, respectively; μ being the relative index of refraction of the two media.

[*Turn over.*

4. What are the conditions of achromatism of a pair of prisms? Explain also how a pair of prisms may be combined so as to give dispersion without deviating the rays of mean refrangibility.

5. Give a brief enumeration of the chief points in the wave-theory of light. How do you account, on that theory, for the existence of dispersion?

6. Explain the existence of "fringes" outside the edge of the geometrical shadow of an opaque body placed in simple diverging light.

7. In all the experiments to produce interference between two lights, with Fresnel's mirrors, biprism, &c., we invariably employ two images of the same source of light and not two actually independent lights. Why is this? What knowledge have we as to continuity in the emission of light rays from a luminous body?

8. State the law connecting absorption of light and the thickness of the absorbing medium.

A crystal of Brazilian tourmaline cut to a sphere appears of a clear green in every direction at right angles to the optic axis, but is absolutely opaque as viewed along the optic axis. Remembering that tourmaline transmits the extraordinary ray and suppresses the ordinary one, what conclusion do you draw from this observation as to the direction of the vibrations of the ray with respect to the plane of polarization? Are they executed in the plane of polarization at right angles to it?

9. A beam of polarized light falls upon a substance whose refractive index is μ. Calculate the relative intensities of the reflected and refracted portions, (*a*) when the incident beam is polarized in the plane of incidence, (*b*) when it is polarized perpendicularly to the plane of incidence.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

MATHEMATICS AND MATHEMATICAL PHYSICS.

PAPER *e* (3). ASTRONOMY.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Demonstrate the following theorem of Newton:—

"Every body that by a radius drawn to the centre of another body, however moved, describes areas about that centre proportional to the times, is urged by a force compounded out of the centripetal force tending to that other body, and of all the accelerative force by which that other body is impelled."

Discuss also the truth or falsity of this proposition if motion take place in a resisting medium.

2. Prove the following equations for a right-angled spherical triangle:—

$$\tan^2\frac{A}{2}=\frac{\sin(c-b)}{\sin(c+b)},$$

$$\cos a=\frac{\cos c}{\cos b}.$$

3. Prove that any two confocal solid ellipsoids of equal mass produce equal attraction through all space external to both of them.

[*Turn over.*

Extend the proof of the preceding so that it shall include a proof of the proposition for any two shells of equal mass (of homogeneous density), each shell being bounded by two confocal ellipsoidal surfaces.

4. Explain the method of deducing the Sun's distance from that of the Moon (supposed known), by observation of the angle of elongation of the Moon when the latter is dichotomized. State why the method is liable to introduce considerable errors of observation.

Show that any small error in observing the elongation will necessarily produce such a large error in the result as to render the method utterly unreliable.

5. The inner satellite of Mars is unique in having its "day" longer than its "month." Discuss the conditions of equilibrium of such a case.

6. The elementary expression for the Moon's longitude is

$$\theta = pt + 2e \sin (pt - \alpha).$$

Show that this is correct to the first order of approximation, and explain how the arbitrary constant of integration introduced during the process of integration has been eliminated.

7. The differential equation of the moon's radius vector may be written in the following form:—

$$\frac{d^2u}{d\theta^2} + u = a + \; . \; . \; . \; . \; + \mathrm{A} \cos (\theta - \alpha) + \; . \; . \; . \; . \; \&c.,$$

and in the solution the first approximate value of u is:—

$$u = a\{1 + e \cos (\theta - \alpha)\};$$

show that the terms which follow in the higher approximations contain θ as a factor of the coefficient of the longitude-function.

Why are such terms inadmissible and incompatible with the known facts of the Moon's distance? How comes it that such terms appear in our mathematical expressions, and how can they be got rid of?

8. Show how to determine the latitude of any place from observation of the time that elapses between the rising of two known stars.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

CHEMISTRY AND EXPERIMENTAL PHYSICS.

PAPER *a* (1). ORGANIC CHEMISTRY.

Examiner: Prof. W. A. TILDEN, D.Sc., F.R.S.

1. A liquid hydrocarbon is given you with the request to determine whether it belongs to the paraffin, the olefine, or the benzene series. How would you proceed?

2. Describe the production of the several isomeric monochlorotoluenes C_7H_7Cl, write constitutional formulæ for them, and justify by reference to their reactions the formulæ you employ.

3. Describe the chief reactions by which glycollic acid is produced. Write formulæ for the amides derivable from glycollic acid.

4. Give exact instructions for making pure ethyl iodide.

5. Enumerate with explanatory equations the principal *general* processes by which amines or compound ammonias may be formed.

6. Explain the reactions which occur in the following processes:—
   - *a.* Oxalic acid heated with concentrated sulphuric acid.
   - *b.* Ammonium oxalate heated alone.
   - *c.* Sodium oxalate heated alone.
   - *d.* Ethyl oxalate mixed with ethylamine.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

CHEMISTRY AND EXPERIMENTAL PHYSICS.

PAPER *a* (2). METALLURGY AND MINERAL CHEMISTRY.

Examiner: Prof. W. A. TILDEN, D.Sc., F.R.S.

1. What is the composition and what are the properties of the best varieties of fire-clay? What components of clay are most detrimental to its refractory character?

2. Describe some efficient form of gas-producer for the conversion of coal into combustible gas for heating purposes.

3. What are the constituents of ordinary cast iron? Give roughly an estimate of their proportions. How would you demonstrate qualitatively the presence of each?

4. How would you prepare pure gold from coin?
In the assay of gold what is meant by the term "quartation," and what is the object of this operation?

5. Where are the chief supplies of tinstone found? Give a sketch of the process of smelting tin.

6. Classify the common metals according as they do or do not act on water or steam.

7. Describe the physical and chemical characters of the following minerals: galena, fluor-spar, apatite, stilbite.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

CHEMISTRY AND EXPERIMENTAL PHYSICS.

PAPER *b*. ELECTRICITY AND MAGNETISM.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Describe fully the phenomenon known as the *extra-current*. How are extra-currents investigated? In what way do they depend upon the resistance of the circuit and on its coefficient of self-induction?

2. Describe the essential parts of some form of continuous-current dynamo-electric machine, and point out the advantages respectively possessed by dynamos that are

(*a*) separately-excited,
(*b*) shunt-wound,
(*c*) series-wound,
(*d*) compound-wound.

3. What is the use of a condenser? Describe the construction of a standard condenser. How would you ascertain whether a condenser marked "one microfarad" really had that capacity?

[*Turn over.*

4. If a condenser (say of 1 microfarad capacity) is introduced into the line in the circuit of an ordinary Morse telegraph, the signals refuse to pass; yet a telephone can still be heard through the condenser. If a big electromagnet having many turns of wire be introduced into the line in the circuit of an ordinary telephone system, it is found almost impossible to hear through it; speech practically refuses to pass; yet a Morse instrument will work almost as well as before. Explain these things.

5. What is the relation between the strength of an electromagnet, and the number of ampères of current that excite it, and the number of turns of wire in its coil? Give some account of the researches made to ascertain this relation experimentally.

6. Upon what circumstances does the electromotive force of a voltaic cell depend? How are the conflicting chemical and contact theories to be reconciled?

7. Describe the siphon-recorder.

8. Explain in detail the methods adopted for measuring the electric resistances of substances (*a*) of very low conductivity, (*b*) of very small resistance.

9. Give an account of the system of units adopted in electrical measurements, grouping them in two sets, electrostatic and electromagnetic.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

NATURAL SCIENCE.

GEOLOGY, MINERALOGY, AND PALÆONTOLOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *a*.

1. Describe the lithological and palæontological characters, and the geographical range, of the Wairoa, Waipara, and Ototara series, respectively, in New Zealand; and indicate their European equivalents.

2. Enumerate the different kinds of Metamorphic Rocks; and briefly explain the agencies that have been suggested as causes of Metamorphism.

3. Name and describe briefly the chief *constituent* and the most frequent *accessory* Minerals in the Metamorphic Rocks.

4. By what characters are the Palæozoic Echinoderms mainly distinguished from the Mesozoic and later forms? Illustrate your answer with sketches.

5. Define some of the chief types of the Cœlenterata, and indicate the corresponding fossil forms.

[*Turn over.*

6. Illustrate by diagrams and description the ran
mutual relations of the Metamorphic and the Palæozoi
in the South Island of New Zealand.

7. Give a brief account of the place and mode of occ
of the following minerals in New Zealand:—Gold,
Titaniferous Ironsand, Graphite, and Nephrite.

8. Explain the origin of Caves in limestone countries.
other physical features are due to the same causes?
some in New Zealand and elsewhere.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

NATURAL SCIENCE.

Geology, Mineralogy, and Palæontology.

Examiner: Prof. T. Rupert Jones, F.R.S., F.G.S.

PAPER *b*.

1. Make a geological sketch-map of the South Island of New Zealand, and a section across its southern half.

2. Describe Mica mineralogically. What rocks are known to contain this mineral? Describe its mode of occurrence in such rocks.

3. What are Spherulites, Spheroids, and Perlites?

4. What means would you adopt to distinguish, under the microscope, between (1) Hornblende, Augite, and Olivine; (2) Biotite and Tourmaline; (3) Quartz and Orthoclase?

5. Define the meaning of Crystalline, Vitreous, Clastic, Granular, Foliated, Cellular, and Porphyritic, as applied to Rocks, and mention examples.

[*Turn over.*

6. Mention the first geological appearance of Pulmoniferous Molluscs, Arachnids, Insects, Fish, Amphibia, Reptiles, Birds, and Mammals respectively.

7. Under what conditions were the following Rocks formed:—Oolite, Chalk, Coal, Clay-ironstone, and Sandstone?

8. Enumerate the chief *argillaceous* and chief *calcareous* formations in New Zealand; mentioning the series to which they belong, and the places where they occur.

NIVERSITY OF NEW ZEALAND.

A. EXAMINATION FOR HONOURS AND M.A., 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *a*. GENERAL PRINCIPLES.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Give an account of the properties, chemical nature, and obable physiological significance of Hæmoglobin and of Chlo-phyll.

2. "In plants the reproductive arrangements, in animals he nutritional, have determined the successive steps of structural elaboration." Illustrate and comment on this statement.

3. Enumerate and classify the chief tissues of plants and of animals. Point out tissues, in plants on the one hand and animals on the other, which have a structural similarity.

4. What are the main features of growth from the egg exhibited respectively by the Cœlenterate and the Cœlomate grades of the animal series.

5. To what generalization do the Carnivorous plants form an xception? Mention and describe the various kinds of Car-ivorous plants which are known.

6. What are zoo-geographical provinces? Mention the ief and their characteristics. In what respects is the flora New Zealand peculiar? and in what respects is its fauna so?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *b* (1). ZOOLOGY (group Mollusca).

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Give an account of the structure of the Pearly Nautilus; compare it with that of Sepia, and show by reference to an ideal archi-mollusc the agreement of parts in the Cephalopoda and Lamellibranchia.

2. Describe the general and minute structure of the gills of Lamellibranchia.

3. Enumerate and classify the freshwater and terrestrial Mollusca of New Zealand.

4. Give a full account of the development from the egg of any Mollusc with which you are familiar.

5. Describe the chief forms of nervous system met with in Mollusca, and show how they may be derived from a common ancestral form.

6. Describe the mechanism of the lingual rasp of Mollusca Glossophora.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, 1885.

NATURAL SCIENCE.

PAPER *b* (2). BOTANY.

(Group: Vascular Cryptogams.)

Examiner: S. H. VINES, M.A., D.Sc.

1. Give a sketch of a natural classification of the Vascular Cryptogams, including both existing and fossil forms.
Discuss the affinities of the Vascular Cryptogams with the Muscineæ on the one hand and with the Gymnosperms on the other.

2. Show that in passing from the lowest to the highest Vascular Cryptogams, the oophore gradually diminishes in size and independence.

3. Point out the peculiarities in the histology of the vegetative organs of Vascular Cryptogams which are, on the whole, characteristic of the group.

4. Discuss the division of the Vascular Cryptogams into Leptosporangiata and Eusporangiata as proposed by Goebel. Give an account of the development of the sporangium of
   a. any Homosporous Leptosporangiate,
   b. any Homosporous Eusporangiate.
Briefly discuss the morphology of the apparently multilocular sporangia of *Marattia, Psilotum,* and *Tmesipteris.*

[*Turn over.*

5. Give a general account of the mode of development of the spores in the Vascular Cryptogams.

Give a detailed comparative description of the development of the macrospores in *Selaginella* and *Isoëtes*.

Describe the peculiarities of the spores of the Salviniaceæ.

6. Describe the germination of (*a*) the microspores, (*b*) the macrospores of the Heterosporous Vascular Cryptogams.

Point out any facts which are likewise to be met with in the germination of the spores of Phanerogams.

7. Describe and discuss the morphology of the sporocarps of the Rhizocarpæ (Hydropterideæ).

8. Give a comparative account of the early stages in the development of the embryo from the oospore in the Vascular Cryptogams. Discuss the morphological and physiological significance of the suspensor of *Selaginella*.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, &c., 1885.

MENTAL SCIENCE.

PAPER *a*. Psychology and Ethics.

Examiner : James Sully, M.A.

1. Give a brief account of any recent experimental investigations into the relation between the strength of a Sensory Stimulus and the degree of the resulting sensation, and indicate the most important results of these investigations.

2. Describe the sensations of Tone or Pitch, Timbre, Noise, and Articulate Sound, and inquire how far they are ultimately distinct one from another.

3. What do you know respecting the phenomena of Double Images? Inquire particularly into their bearing on the disputed part of the doctrine of Visual Perception.

4. Explain the growth of the idea of Time, distinguishing between the consciousness of Succession and that of Duration. Which mode of perception is the more liable to be false or illusory, and why?

5. What does recent investigation into the psychological nature and function of Names appear to you to teach us respecting the relation of Imagination, or Representation of Concrete things, to Abstract Thought?

[*Turn over.*

6. Inquire carefully into the meaning of the term Instinct. In what sense, or different senses, may we speak of a man's possessing a Moral Instinct?

7. How many fundamentally distinct methods or principles of Ethics are there? Does the maxim "Follow nature" constitute a distinct Ethical principle?

8. Define Butler's position in Ethical discussion.
Point out his historical antecedents, and the influence of his system on his successors.

9. How does the Utilitarian weigh the agent's own happiness against that of another?
A is in peril of his life, and can only make sure of preserving it by destroying B's life, which is involved in like peril at the moment. How would a Utilitarian define A's duty and his right under these circumstances?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, &c., 1885.

MENTAL SCIENCE.

PAPER *b*. Logic.

Examiner: James Sully, M.A.

1. Expound the distinction between Connotative and Non-connotative Names, and briefly discuss the question whether (*a*) Abstract Names, and (*b*) Proper Names are in any instances to be regarded as Connotative.

2. Point out the main difficulties connected with the word "some" as employed in Logic, distinguishing the case in which it is attached to the Subject from that in which (according to Hamilton's doctrine) it is attached to the Predicate.

3. Discuss the relation between Categorical and Hypothetical Judgments or Propositions, examining the attempt to reduce the latter to the former, as well as the attempt to reduce the former to the latter.

4. Represent by any Symbolic method known to you the following propositions, and state what inferences can be drawn from them (taken together):—

(1) Every A is either B or C.

(2) Nothing which is both B and D is at the same time A.

5. What do you take to be the ultimate ground of Induction? Do we by assuming some fundamental axiom of Induction necessarily reduce the process to a form of Deduction?

[*Turn over.*

6. Compare any two views respecting the nature and ground of Probability.

7. Explain the scientific idea of Impossibility, and show how the progress of scientific discovery has modified the conception.

8. Investigate the principal difficulties in the way of a scientific classification of Fallacies, and inquire how far they have been overcome.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, &c., 1885.

MENTAL SCIENCE.

PAPER *c*. HISTORY OF PHILOSOPHY.

Examiner: JAMES SULLY, M.A.

1. What traces of the modern doctrine of Evolution are to be met with in the Pre-Sokratic period of Greek Philosophy?

2. Define the relation of Sokrates to his philosophic predecessors, and explain what is meant by saying that he first concentrated thought on man's own nature.

3. Compare the ideas of Plato and Aristotle respecting the nature and criterion of true Cognition.

4. Illustrate the influence of Judaic and Christian ideas on the development of philosophic speculation in the first centuries of our era.

5. Give an account of the Dualism of Descartes, and point out the principal changes it underwent at the hands of his disciples.

6. Give a critical account of the main points of dispute between Locke and Leibniz.

[*Turn over.*

7. Bring out the differences between the treatment of the idea of Power or Causal Agency by Berkeley and by Hume.

To what extent is Hume's philosophic doctrine a logical development of Berkeley's own principles?

8. Define the aim and scope of Kant's Critical Inquiry, indicating his position in relation both to the Skepticism and to the Dogmatism of his immediate predecessors.

9. How far does the modern doctrine of Evolution supply a means of reconciling the opposed views respecting the origin and the validity of knowledge?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

LATIN LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

I. *Translate*:—

(A.) Cicero: Tusc. Disput. iii. 33. 79.

Ne illa quidem firmissima consolatio est, quamquam et usitata est et saepe prodest: 'Non tibi hoc soli.' Prodest haec quidem ut dixi, sed nec semper nec omnibus. Sunt enim qui respuant, sed refert quo modo adhibeatur. Ut enim tulerit quisque eorum, qui sapienter tulerunt, non quo quisque incommodo adfectus sit, praedicandum est. Chrysippi ad veritatem firmissima est, ad tempus aegritudinis difficilis. Magnum opus est probare maerenti illum suo iudicio et, quod se ita putet oportere facere, maerere. Nimirum igitur, ut in causis non semper utimur eodem statu—sic enim appellamus controversiarum genera— sed ad tempus, ad controversiae naturam, ad personam accommodamus, sic in aegritudine lenienda quam quisque curationem recipere possit videndum est.

(B.) Tacitus: Annals, vi. 48.

Igitur Domitius, defensionem meditans, Marsus, tamquam inediam destinavisset, produxere vitam: Arruntius, cunctationem et moras suadentibus amicis, Non eadem omnibus decora,

respondit. Sibi satis aetatis: neque aliud paenitendum, quam quod inter ludibria et pericula anxiam senectam toleravisset, diu Seiano, nunc Macroni, semper alicui potentium invisus; non culpa, sed ut flagitiorum inpatiens. Sane paucos et supremos principis dies posse vitari: quemadmodum evasurum inminentis iuventam? An cum Tiberius, post tantam rerum experientiam, vi dominationis convulsus et mutatus sit, C. Caesarem, vix finita pueritia, ignarum omnium, aut pessimis innutritum, meliora capessiturum, Macrone duce? qui, ut deterior, ad opprimendum Seianum delectus, plura per scelera remp. conflictavisset. Prospectare iam se acrius servitium, eoque fugere simul acta et instantia. Haec vatis in modum dictitans, venas resolvit. Documento sequentia erunt, bene Arruntium morte usum.

(C.) Vergil: Aeneid, xi. 507–531.

Turnus ad haec, oculos horrenda in virgine fixus:
"O decus Italiae virgo, quas dicere grates,
Quasve referre parem? sed nunc, est omnia quando
Iste animus supra, mecum partire laborem.
Aeneas, ut fama fidem missique reportant
Exploratores, equitum levia improbus arma
Praemisit, quaterent campos; ipse ardua montis
Per deserta iugo superans adventat ad urbem.
Furta paro belli convexo in tramite silvae,
Ut bivias armato obsidam milite fauces.
Tu Tyrrhenum equitem collatis excipe signis;
Tecum acer Messapus erit, turmaeque Latinae,
Tiburnique manus: ducis et tu concipe curam."
Sic ait, et paribus Messapum in proelia dictis
Hortatur sociosque duces, et pergit in hostem.
Est curvo anfractu valles, accommoda fraudi
Armorumque dolis, quam densis frondibus atrum
Urget utrimque latus; tenuis quo semita ducit,
Angustaeque ferunt fauces aditusque maligni.
Hanc super in speculis summoque in vertice montis
Planities ignota iacet, tutique receptus;
Seu dextra laevaque velis occurrere pugnae,
Sive instare iugis, et grandia volvere saxa.
Huc iuvenis nota fertur regione viarum,
Arripuitque locum, et silvis insedit iniquis.

(D.) Tibullus: i. 10. 33–50.

Quis furor est atram bellis arcessere mortem?
  Inminet et tacito clam venit illa pede.

Non seges est infra, non vinea culta, sed audax
  Cerberus et Stygiae navita turpis aquae :
Illic perscissisque genis ustoque capillo
  Errat ad obscuros pallida turba lacus.
Quam potius laudandus hic est, quem prole parata
  Occupat in parva pigra senecta casa !
Ipse suas sectatur oves, at filius agnos,
  Et calidam fesso conparat uxor aquam.
Sic ego sim, liceatque caput candescere canis,
  Temporis et prisci facta referre senem.
Interea Pax arva colat. Pax candida primum
  Duxit araturos sub iuga panda boves,
Pax aluit vites et sucos condidit uvae,
  Funderet ut nato testa paterna merum :
Pace bidens vomerque vigent, at tristia duri
  Militis in tenebris occupat arma situs.

II. 1. Write notes upon the syntax of the following, with a translation :—

(*a*) Si in rem tuam esse videatur gloriae aut famae sinam.
(*b*) De grege non ausim quicquam deponere tecum.
(*c*) Viridesque manu siccata capillos.
(*d*) Nescit utro potius ruat, et ruere ardet utroque.

2. What laws of sound are illustrated by the derivation of the following :—*flamma, fossor, sartus, brevis, dirimo, suffoco* ? Quote one other example of each law.

3. State the chief rules for reported speech ; and illustrate them by examples.

4. Date the principal stages by which the Romans became masters of Italy.

5. Give a brief sketch of the political history of Rome from the defeat of the Cimbri to the outbreak of the war with Mithridates.

6. Describe the legislation of Julius Caesar in his dictatorship.

UNIVERSITY OF NEW ZEALAND.

XAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

Translate into English:—

(A.) Homer: Odyssey, Book XIII. 17–35.

Οἱ μὲν κακκείοντες ἔβαν οἶκόνδε ἕκαστος.
ἦμος δ' ἠριγένεια φάνη ῥοδοδάκτυλος ’Ηώς,
νῆ' ἄρ' ἐπεσσεύοντο, φέρον δ' εὐήνορα χαλκόν·
καὶ τὰ μὲν εὖ κατέθηχ' ἱερὸν μένος ’Αλκινόοιο,
αὐτὸς ἰὼν διὰ νηός, ὑπὸ ζυγά, μή τιν' ἑταίρων
βλάπτοι ἐλαυνόντων, ὁπότε σπερχοίατ' ἐρετμοῖς.
οἱ δ' εἰς ’Αλκινόοιο κίον, καὶ δαῖτ' ἀλέγυνον.
Τοῖσι δὲ βοῦν ἱέρευσ' ἱερὸν μένος ’Αλκινόοιο
Ζηνὶ κελαινεφέϊ Κρονίδῃ, ὃς πᾶσιν ἀνάσσει.
μῆρα δὲ κείαντες δαίνυντ' ἐρικυδέα δαῖτα,
τερπόμενοι· μετὰ δέ σφιν ἐμέλπετο θεῖος ἀοιδός,
Δημόδοκος, λαοῖσι τετιμένος. αὐτὰρ ’Οδυσσεὺς
πολλὰ πρὸς ἠέλιον κεφαλὴν τρέπε παμφανόωντα,
δῦναι ἐπειγόμενος· δὴ γὰρ μενέαινε νέεσθαι.
ὥς δ' ὅτ' ἀνὴρ δόρποιο λιλαίεται, ᾧτε πανῆμαρ
νειὸν ἀν' ἕλκητον βόε οἴνοπε πηκτὸν ἄροτρον·
ἀσπασίως δ' ἄρα τῷ κατέδυ φάος ἠελίοιο,
δόρπον ἐποίχεσθαι, βλάβεται δέ τε γούνατ' ἰόντι·
ὣς ’Οδυσῆ' ἀσπαστὸν ἔδυ φάος ἠελίοιο.

6. Inquire carefully into the meaning of the term Instinct. In what sense, or different senses, may we speak of a man's possessing a Moral Instinct?

7. How many fundamentally distinct methods or principles of Ethics are there? Does the maxim "Follow nature" constitute a distinct Ethical principle?

8. Define Butler's position in Ethical discussion.

Point out his historical antecedents, and the influence of his system on his successors.

9. How does the Utilitarian weigh the agent's own happiness against that of another?

A is in peril of his life, and can only make sure of preserving it by destroying B's life, which is involved in like peril at the moment. How would a Utilitarian define A's duty and his right under these circumstances?

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, &c., 1885.

MENTAL SCIENCE.

PAPER *b*. Logic.

Examiner: James Sully, M.A.

1. Expound the distinction between Connotative and Non-connotative Names, and briefly discuss the question whether (*a*) Abstract Names, and (*b*) Proper Names are in any instances to be regarded as Connotative.

2. Point out the main difficulties connected with the word "some" as employed in Logic, distinguishing the case in which it is attached to the Subject from that in which (according to Hamilton's doctrine) it is attached to the Predicate.

3. Discuss the relation between Categorical and Hypothetical Judgments or Propositions, examining the attempt to reduce the latter to the former, as well as the attempt to reduce the former to the latter.

4. Represent by any Symbolic method known to you the following propositions, and state what inferences can be drawn from them (taken together):—

(1) Every A is either B or C.
(2) Nothing which is both B and D is at the same time A.

5. What do you take to be the ultimate ground of Induction? Do we by assuming some fundamental axiom of Induction necessarily reduce the process to a form of Deduction?

[Turn over.

6. Compare any two views respecting the nature and ground of Probability.

7. Explain the scientific idea of Impossibility, and show how the progress of scientific discovery has modified the conception.

8. Investigate the principal difficulties in the way of a scientific classification of Fallacies, and inquire how far they have been overcome.

UNIVERSITY OF NEW ZEALAND.

B.A. EXAMINATION FOR HONOURS, &c., 1885.

MENTAL SCIENCE.

PAPER *c*. HISTORY OF PHILOSOPHY.

Examiner: JAMES SULLY, M.A.

1. What traces of the modern doctrine of Evolution are to be met with in the Pre-Sokratic period of Greek Philosophy?

2. Define the relation of Sokrates to his philosophic predecessors, and explain what is meant by saying that he first concentrated thought on man's own nature.

3. Compare the ideas of Plato and Aristotle respecting the nature and criterion of true Cognition.

4. Illustrate the influence of Judaic and Christian ideas on the development of philosophic speculation in the first centuries of our era.

5. Give an account of the Dualism of Descartes, and point out the principal changes it underwent at the hands of his disciples.

6. Give a critical account of the main points of dispute between Locke and Leibniz.

[*Turn over.*

7. Bring out the differences between the treatment of the idea of Power or Causal Agency by Berkeley and by Hume.

To what extent is Hume's philosophic doctrine a logical development of Berkeley's own principles?

8. Define the aim and scope of Kant's Critical Inquiry, indicating his position in relation both to the Skepticism and to the Dogmatism of his immediate predecessors.

9. How far does the modern doctrine of Evolution supply a means of reconciling the opposed views respecting the origin and the validity of knowledge?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

LATIN LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. WILKINS, M.A., Litt.D., LL.D.

PAPER *a*.

I. *Translate* :—

(A.) CICERO: Tusc. Disput. iii. 33. 79.

Ne illa quidem firmissima consolatio est, quamquam et usitata est et saepe prodest: 'Non tibi hoc soli.' Prodest haec quidem ut dixi, sed nec semper nec omnibus. Sunt enim qui respuant, sed refert quo modo adhibeatur. Ut enim tulerit quisque eorum, qui sapienter tulerunt, non quo quisque incommodo adfectus sit, praedicandum est. Chrysippi ad veritatem firmissima est, ad tempus aegritudinis difficilis. Magnum opus est probare maerenti illum suo iudicio et, quod se ita putet oportere facere, maerere. Nimirum igitur, ut in causis non semper utimur eodem statu—sic enim appellamus controversiarum genera— sed ad tempus, ad controversiae naturam, ad personam accommodamus, sic in aegritudine lenienda quam quisque curationem recipere possit videndum est.

(B.) TACITUS: Annals, vi. 48.

Igitur Domitius, defensionem meditans, Marsus, tamquam inediam destinavisset, produxere vitam: Arruntius, cunctationem et moras suadentibus amicis, Non eadem omnibus decora, respondit. Sibi satis aetatis: neque aliud paenitendum, quam quod inter ludibria et pericula anxiam senectam toleravisset, diu Seiano, nunc Macroni, semper alicui potentium invisus; non culpa, sed ut flagitiorum inpatiens. Sane paucos et supremos principis dies posse vitari: quemadmodum evasurum inminentis iuventam? An cum Tiberius, post tantam rerum experientiam, vi dominationis convulsus et mutatus sit, C. Caesarem, vix finita pueritia, ignarum omnium, aut pessimis innutritum, meliora capessiturum, Macrone duce? qui, ut deterior, ad opprimendum Seianum delectus, plura per scelera remp. conflictavisset. Prospectare iam se acrius servitium, eoque fugere simul acta et instantia. Haec vatis in modum dictitans, venas resolvit. Documento sequentia erunt, bene Arruntium morte usum.

(C.) **Vergil**: Aeneid, xi. 507–531.

Turnus ad haec, oculos horrenda in virgine fixus:
"O decus Italiae virgo, quas dicere grates,
Quasve referre parem? sed nunc, est omnia quando
Iste animus supra, mecum partire laborem.
Aeneas, ut fama fidem missique reportant
Exploratores, equitum levia improbus arma
Praemisit, quaterent campos; ipse ardua montis
Per deserta iugo superans adventat ad urbem.
Furta paro belli convexo in tramite silvae,
Ut bivias armato obsidam milite fauces.
Tu Tyrrhenum equitem collatis excipe signis;
Tecum acer Messapus erit, turmaeque Latinae,
Tiburnique manus: ducis et tu concipe curam."
Sic ait, et paribus Messapum in proelia dictis
Hortatur sociosque duces, et pergit in hostem.
Est curvo anfractu valles, accommoda fraudi
Armorumque dolis, quam densis frondibus atrum
Urget utrimque latus; tenuis quo semita ducit,
Angustaeque ferunt fauces aditusque maligni.
Hanc super in speculis summoque in vertice montis
Planities ignota iacet, tutique receptus;
Seu dextra laevaque velis occurrere pugnae,
Sive instare iugis, et grandia volvere saxa.
Huc iuvenis nota fertur regione viarum,
Arripuitque locum, et silvis insedit iniquis.

(D.) **Tibullus**: i. 10. 33–50.

Quis furor est atram bellis arcessere mortem?
  Inminet et tacito clam venit illa pede.

Non seges est infra, non vinea culta, sed audax
  Cerberus et Stygiae navita turpis aquae:
Illic perscissisque genis ustoque capillo
  Errat ad obscuros pallida turba lacus.
Quam potius laudandus hic est, quem prole parata
  Occupat in parva pigra senecta casa!
Ipse suas sectatur oves, at filius agnos,
  Et calidam fesso conparat uxor aquam.
Sic ego sim, liceatque caput candescere canis,
  Temporis et prisci facta referre senem.
Interea Pax arva colat. Pax candida primum
  Duxit araturos sub iuga panda boves,
Pax aluit vites et sucos condidit uvae,
  Funderet ut nato testa paterna merum:
Pace bidens vomerque vigent, at tristia duri
  Militis in tenebris occupat arma situs.

II. 1. Write notes upon the syntax of the following, with a translation:—

(*a*) Si in rem tuam esse videatur gloriae aut famae sinam.
(*b*) De grege non ausim quicquam deponere tecum.
(*c*) Viridesque manu siccata capillos.
(*d*) Nescit utro potius ruat, et ruere ardet utroque.

2. What laws of sound are illustrated by the derivation of the following:—*flamma, fossor, sartus, brevis, dirimo, suffoco*? Quote one other example of each law.

3. State the chief rules for reported speech; and illustrate them by examples.

4. Date the principal stages by which the Romans became masters of Italy.

5. Give a brief sketch of the political history of Rome from the defeat of the Cimbri to the outbreak of the war with Mithridates.

6. Describe the legislation of Julius Caesar in his dictatorship.

NIVERSITY OF NEW ZEALAND.

XAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

GREEK LANGUAGE AND LITERATURE.

Examiner: Prof. A. S. Wilkins, M.A., Litt.D., LL.D.

PAPER *a*.

Translate into English:—

(A.) Homer: Odyssey, Book XIII. 17–35.

Οἱ μὲν κακκείοντες ἔβαν οἶκόνδε ἕκαστος.
ἦμος δ' ἠριγένεια φάνη ῥοδοδάκτυλος 'Ηώς,
νῆ' ἄρ' ἐπεσσεύοντο, φέρον δ' εὐήνορα χαλκόν·
καὶ τὰ μὲν εὖ κατέθηχ' ἱερὸν μένος 'Αλκινόοιο,
αὐτὸς ἰὼν διὰ νηός, ὑπὸ ζυγά, μή τιν' ἑταίρων
βλάπτοι ἐλαυνόντων, ὁπότε σπερχοίατ' ἐρετμοῖς.
οἱ δ' εἰς 'Αλκινόοιο κίον, καὶ δαῖτ' ἀλέγυνον.
Τοῖσι δὲ βοῦν ἱέρευσ' ἱερὸν μένος 'Αλκινόοιο
Ζηνὶ κελαινεφέϊ Κρονίδῃ, ὃς πᾶσιν ἀνάσσει.
μῆρα δὲ κείαντες δαίνυντ' ἐρικυδέα δαῖτα,
τερπόμενοι· μετὰ δέ σφιν ἐμέλπετο θεῖος ἀοιδός,
Δημόδοκος, λαοῖσι τετιμένος. αὐτὰρ 'Οδυσσεὺς
πολλὰ πρὸς ἠέλιον κεφαλὴν τρέπε παμφανόωντα,
δῦναι ἐπειγόμενος· δὴ γὰρ μενέαινε νέεσθαι.
ὡς δ' ὅτ' ἀνὴρ δόρποιο λιλαίεται, ᾧτε πανῆμαρ
νειὸν ἀν' ἕλκητον βόε οἴνοπε πηκτὸν ἄροτρον·
ἀσπασίως δ' ἄρα τῷ κατέδυ φάος ἠελίοιο,
δόρπον ἐποίχεσθαι, βλάβεται δέ τε γούνατ' ἰόντι·
ὣς 'Οδυσῆ' ἀσπαστὸν ἔδυ φάος ἠελίοιο.

(B.) Euripides: Iphig. in Taur. 687–707.

Εὔφημα φώνει· τἀμὰ δεῖ φέρειν κακά·
ἁπλᾶς δὲ λύπας ἐξὸν, οὐκ οἴσω διπλᾶς.
ὃ γὰρ σὺ λυπρὸν κἀπονείδιστον λέγεις,
ταῦτ᾽ ἔστιν ἡμῖν, εἴ σε συμμοχθοῦντ᾽ ἐμοὶ
κτενῶ· τὸ μὲν γὰρ εἰς ἔμ᾽ οὐ κακῶς ἔχει,
πράσσονθ᾽ ἃ πράσσω πρὸς θεῶν, λείπειν βίον.
σὺ δ᾽ ὄλβιός τ᾽ εἶ, καθαρά τ᾽ οὐ νοσοῦντ᾽ ἔχεις
μέλαθρ᾽, ἐγὼ δὲ δυσσεβῆ καὶ δυστυχῆ.
σωθεὶς δὲ παῖδας ἐξ ἐμῆς ὁμοσπόρου
κτησάμενος, ἣν ἔδωκά σοι δάμαρτ᾽ ἔχειν,
ὄνομά τ᾽ ἐμοῦ γένοιτ᾽ ἂν, οὐδ᾽ ἄπαις δόμος
πατρῷος οὑμὸς ἐξαλειφθείη ποτ᾽ ἄν.
ἀλλ᾽ ἕρπε καὶ ζῆ καὶ δόμους οἴκει πατρός.
ὅταν δ᾽ ἐς Ἑλλάδ᾽ ἵππιόν τ᾽ Ἄργος μόλῃς,
πρὸς δεξιᾶς σε τῆσδ᾽ ἐπισκήπτω τάδε·
τύμβον τε χῶσον κἀπίθες μνημεῖά μοι,
καὶ δάκρυ᾽ ἀδελφὴ καὶ κόμας δότω τάφῳ.
ἄγγελλε δ᾽ ὡς ὄλωλ᾽ ὑπ᾽ Ἀργείας τινὸς
γυναικὸς, ἀμφὶ βωμὸν ἁγνισθεὶς φόνῳ.
καὶ μὴ προδῷς μου τὴν κασιγνήτην ποτὲ,
ἔρημα κήδη καὶ δόμους ὁρῶν πατρός.

(C.) Demosthenes: Contra Leptinem, p. 477.

Πάνυ τοίνυν ἀχθοίμην ἄν, ὦ ἄνδρες δικασταί, εἰ τοῦτο μόνον δόξαιμι δίκαιον κατηγορεῖν τοῦ νόμου, ὅτι πολλοὺς ξένους εὐεργέτας ἀφαιρεῖται τὴν ἀτέλειαν, τῶν δὲ πολιτῶν μηδέν᾽ ἄξιον δοκοίην ἔχειν δεῖξαι τῶν εὑρημένων ταύτην τὴν τιμήν. καὶ γὰρ τἄλλα ἀγαθὰ εὐξαίμην ἂν ἔγωγε παρ᾽ ἡμῖν εἶναι πλεῖστα, καὶ ἄνδρας ἀρίστους καὶ πλείστους εὐεργέτας τῆς πόλεως πολίτας εἶναι. πρῶτον μὲν τοίνυν Κόνωνα σκοπεῖτε, εἰ ἄρ᾽ ἄξιον καταμεμψαμένους ἢ τὸν ἄνδρα ἢ τὰ πεπραγμένα ἄκυρόν τι ποιῆσαι τῶν ἐκείνῳ δοθέντων. οὗτος γάρ, ὡς ὑμῶν τινῶν ἔστιν ἀκοῦσαι τῶν κατὰ τὴν αὐτὴν ἡλικίαν ὄντων, μετὰ τὴν τοῦ δήμου κάθοδον τὴν ἐκ Πειραιῶς ἀσθενοῦς ἡμῶν τῆς πόλεως οὔσης καὶ ναῦν οὐδεμίαν κεκτημένης, στρατηγῶν

βασιλεῖ, παρ' ὑμῶν οὐδ' ἡντινοῦν ἀφορμὴν λαβών, κατεναυμάχησε Λακεδαιμονίους, καὶ πρότερον τοῖς ἄλλοις ἐπιτάττοντας εἴθισεν ἀκούειν ὑμῶν, καὶ τοὺς ἁρμοστὰς ἐξήλασεν ἐκ τῶν νήσων, καὶ μετὰ ταῦτα δεῦρ' ἐλθὼν ἀνέστησε τὰ τείχη, καὶ πρῶτος πάλιν περὶ τῆς ἡγεμονίας ἐποίησε τῇ πόλει τὸν λόγον πρὸς Λακεδαιμονίους εἶναι.

II.

1. Give the Attic equivalents of the Epic forms used in Extract A.

2. State the rules for the use of *ἄν, ἵνα, ὥστε, οὕνεκα.*

3. Explain precisely the reason for the mood used in

(α) *τεθναίην, ὅτε μοι μηκέτι ταῦτα μέλοι,*
(β) *ὀκνοίην ἂν εἰς τὰ πλοῖα ἐμβαίνειν, μὴ καταδύσῃ,*
(γ) *ἃ τις μὴ προσεδόκησεν, οὐδὲ φυλάξασθαι ἐγχωρεῖ* :

and for the case in

(δ) *βουλευόμεθα αὐτοῖς διὰ φιλίας ἰέναι,*
(ε) *νέφος δ' οὐ φαίνετο πάσης γαίης,*
(ζ) *προπέποται τῆς παραυτίκα χάριτος τὰ τῆς πόλεως πράγματα.*

4. Give the principal parts of the verbs from which come *ἔθιγε, εἶκα, ἠλάθη, ἀμφιῶ, δέκτο, βλεῖο, χύτο, ἔωσε, ἐρράγη, ἐπρίω.*

5. Describe the growth of the Athenian empire, with dates. What states were included at the time of its greatest extent?

6. Give some account of the leading statesmen contemporary with Demosthenes, and of the policy which they respectively pursued.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

ENGLISH LITERATURE.

PAPER *b*.

Examiner: Prof. Henry Morley, LL.D.

1. Give some account of the state of English Literature between the years 1790 and 1800, naming a few of the chief books published in that time.

2. Write some notes on the reintroduction of the Sonnet into English Literature at the beginning of this century.

3. Tell the chief incidents in the life of Charles Lamb to the year 1825.

4. Describe and discuss Coleridge's 'Christabel.' When was it written? When was it published?

5. When did Southey become Poet Laureate? Who was his predecessor? Describe Southey's 'Roderick,' or any other of his longer poems.

6. Describe any one of Scott's novels written before 1825, with particular reference to the construction of its story as a work of art.

[*Turn over.*

7. Who wrote 'Peter Plymley's Letters on the Catholics'? Give some account of him.

8. Tell what you know of books written within the period you have been studying by Malthus, Bentham and Ricardo.

9. Name the author of each of the following works:—
'The Farmer's Boy,' 'Castle Rackrent,' 'Thaddeus of Warsaw,' 'The Sabbath,' 'Gertrude of Wyoming,' 'The Borough,' 'Rejected Addresses,' 'Plays on the Passions,' 'The Story of Rimini,' 'Peter Bell,' 'The Cenci,' 'Lamia,' 'The World before the Flood.'

10. Write an essay on the poems written by Wordsworth before 1815.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

FRENCH.

Examiner: Rev. P. H. **Ernest Brette**, B.D.

PAPER *a*.

A. Grammaire :—

(N.B. *Ne répondez qu'à* cinq *des questions suivantes, mais répondez* en français.)

1. (*a*) De quel genre sont généralement en français les substantifs abstraits qui se terminent en *-eur* et qui sont dérivés de substantifs latins dont l'accusatif se termine en *-orem* ?—Citez les exceptions.
(*b*) Quelle espèce de substantifs forme-t-on en français à l'aide du suffixe *-aine* ? Donnez quelques exemples et dites de quel genre sont ces substantifs.

2. Expliquez sur quel principe est basée la suppression de l'affixe personnel dans les phrases suivantes :—

"Je *voi*
Ce présent qu'une épouse avait reçu de moi."
(Voltaire.)

"Tantôt, cherchant la fin d'un vers que je *construi*,
Je trouve, au coin d'un bois, le mot qui m'avait fui."
(Boileau.)

3. Distinguez entre *l'imparfait, le prétérit défini* et *le prétérit indéfini* de l'indicatif. Montrez en quoi le français et l'anglais diffèrent dans l'emploi de ces temps. Comparez aussi avec le latin, et donnez des exemples.

4. Expliquez *historiquement* les formes des verbes *aller, devoir, mouvoir, pouvoir, savoir, vouloir,* au *présent du subjonctif.*

5. Expliquez les règles sur le participe passé des verbes réfléchis et donnez des exemples. Indiquez aussi la règle concernant le participe passé des verbes impersonnels, et citez des exemples pour les verbes *il y a eu, il a fait, il a fallu.*

6. Traduisez les phrases suivantes *pour montrer la différence des régimes des verbes anglais et français* :—

(*a*) The infidel does not pray to God.
(*b*) Will you ring for my servant?
(*c*) Please, blow the candle out.
(*d*) I never met with this man before.
(*e*) Why did you let the fire go out?
(*f*) My father does not enjoy good health.
(*g*) What do you want? I want a new copy-book.
(*h*) Leave off talking.
(*i*) My sister spends two hours a day in singing.

7. Expliquez la différence qu'il y a dans l'usage qu'on fait de *quelque* et de *quel que*; et traduisez :—

(*a*) Quelque malheureux que nous soyons...
(*b*) De quelques malheurs que nous souffrions...
(*c*) Quels que soient les malheurs que nous ayons à souffrir...

8. Par quels temps exprimez-vous le futur et le conditionnel (*en anglais*) après la conjonction *si*? Dites l'exception. Traduisez comme exemples :—

(*a*) He will be very glad if you will go and see him.
(*b*) I shall feel grateful if you will assist me.
(*c*) I should feel grateful if you would assist me.
(*d*) I do not know if my friend will come to-night.
(*e*) I did not know whether my friend would come.

B. Traduisez en anglais :—

Les Premières Lectures.

Je suis de ceux pour qui la connaissance d'un livre peut devenir un véritable événement moral. Le peu de bons ouvrages dont je me suis pénétré depuis que j'existe, a développé le peu de bonnes qualités que j'ai. Je ne sais ce qu'auraient produit de mauvaises lectures; je n'en ai point fait, ayant eu le bonheur d'être bien dirigé dès mon enfance. Il ne me reste donc à cet égard que les plus doux et les plus chers souvenirs. Un livre a toujours été pour moi un ami, un conseil, un consolateur éloquent et calme, dont je ne voulais pas épuiser vite les ressources, et que je gardais pour les occasions favorables. Oh ! quel est celui de nous qui ne se rappelle avec amour les premiers ouvrages qu'il a dévorés et savourés ? La couverture d'un bouquin poudreux, que vous retrouvez sur les rayons d'une armoire oubliée, ne vous a-t-elle jamais retracé les gracieux tableaux de vos jeunes années? N'avez-vous pas cru voir surgir devant vous la grande prairie baignée des rouges clartés du soir, lorsque vous le lûtes pour la première fois ? Le vieil ormeau et la haie qui vous abritèrent, et le fossé dont le revers vous servit de lit de repos et de table de travail, tandis que la grive chantait la retraite à ses compagnes et que le pipeau du vacher se perdait dans l'éloignement? Oh! que la nuit tombait vite sur ces pages divines ! que le crépuscule faisait cruellement flotter les caractères sur la feuille pâlissante! C'en est fait, les agneaux bêlent, les brebis sont arrivées à l'étable, le grillon prend possession des chaumes de la plaine. Les formes des arbres s'effacent dans le vague de l'air, comme tout à l'heure les caractères sur le livre. Il faut partir; le chemin est pierreux, l'écluse est étroite et glissante; la côte est rude; vous êtes couvert de sueur; mais vous avez beau faire, vous arriverez trop tard, le souper sera commencé.—GEORGE SAND.

C. Traduisez en français :—

The City of London on Sundays.

It is Sunday morning. The bells are chiming. The city is quiet, even to melancholy. The haunts of the lords of

business are deserted, and seem to possess a mysterious spirit of solitariness. The few straggling persons you meet with are not citizens. Most of them are countrymen, who have just arrived by railway: you know them by the dreaminess and general vagueness with which they look around them—here, there, and everywhere but the direction in which they are journeying. To those accustomed to the city on business-days, a walk through it on a Sunday morning is as strange as visiting some foreign land, the only knowledge of which you have gathered by photographs and engravings. Here and there you discover to your surprise a post, a letter-box, a railing, an inscription, an antiquity, or an architectural object, of the existence of which you were not cognisant, though you had passed the spot perhaps twice a day for years. During the week, the crowds of business-men who are running against each other, render it necessary for you to be careful to look straight ahead. You are all anxiety to discover some friendly gaps by which you may emerge out of a chaos of black coats, without being subjected to a blow in the stomach from the elbow of some nervous man, whose business anxiety makes him oblivious of all the comforts of his fellow-men.—E. Leach.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

FRENCH.

Examiner: Rev. P. H. Ernest Brette, B.D.

PAPER *b*.

A. Littérature.

(N.B. *Ne traitez que* quatre *des questions suivantes, mais répondez* en français.)

1. En quoi la littérature du xviiie siècle continue-t-elle celle du xviie, et en quoi s'en distingue-t-elle?

2. Qui était Marivaux? Que veulent dire les expressions "C'est du marivaudage"; "Donner dans le marivaudage"?

3. Citez quelques exemples (*a*) de la partialité du duc de Saint-Simon, (*b*) de son talent comme peintre de portraits, dans ses "Mémoires."

4. Montrez, par des exemples, quel est le véritable objet des *“ Lettres persanes.”*

5. Qu'est-ce que *“ L'Encyclopédie ”* ?

6. Prouvez la vérité de cette assertion, à propos de Jean-Jacques Rousseau : “Il n'est guère d'écrivains qui aient exercé une action plus puissante, plus étendue et plus diverse; car son influence est aussi mêlée de bien et de mal que sa vie elle-même et ses ouvrages.”

B. Traduisez en anglais :—

Voix d'un Enfant d'un An.

Que dit-il ? Croyez-vous qu'il parle ?—J'en suis sûr.
—Mais à qui parle-t-il ?—À quelqu'un dans l'azur ;
A ce que nous nommons les esprits ; à l'espace ;
Au doux battement d'aile invisible qui passe,
A l'ombre, au vent, peut-être au petit frère mort.
L'enfant apporte un peu de ce Ciel dont il sort ;
Il ignore, il arrive : homme, tu le recueilles !
Il a le tremblement des herbes et des feuilles.
La jaserie, avant le langage, est la fleur
Qui précède le fruit, moins beau qu'elle et meilleur
(Si c'est être meilleur qu'être plus nécessaire).
L'enfant candide, au seuil de l'humaine misère,
Regarde cet étrange et redoutable lieu,
Ne comprend pas, s'étonne, et, n'y voyant pas Dieu,
Balbutie, humble voix confiante et touchante ;
Ce qui pleure finit par être ce qui chante.
Ses premiers mots ont peur comme ses premiers pas.

VICTOR HUGO.

C. Traduisez en français :—

Not always actions show the man : we find
Who does a kindness, is not therefore kind :
Perhaps prosperity becalm'd his breast,
Perhaps the wind just shifted from the east :
Not therefore humble he who seeks retreat,
Pride guides his steps, and bids him shun the great :
Who combats bravely is not therefore brave,
He dreads a death-bed like the meanest slave :
Who reasons wisely is not therefore wise,
His pride in reasoning, not in acting, lies.
But grant that actions best discover man :
Take the most strong, and sort them as you can :
The few that glare, each character must mark,
You balance not the many in the dark.
What will you do with such a disagree ?
Suppress them, or miscall them policy ?
Must then at once (the character to save)
The plain rough hero turn a crafty knave ?
Alas ! in truth the man but changed his mind,
Perhaps was sick, in love, or had not din'd.—Pope.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

GERMAN.

Examiner: Prof. C. A. Buchheim, Ph.D., F.C.P.

PAPER *a*.

Translate into English:—

(*a*) Als unerfahrner Knabe kam ich her,
In einem Augenblick, da Feſt auf Feſt,
Ferrara zu dem Mittelpunkt der Ehre
Zu machen ſchien. O! welcher Anblick war's!
Den weiten Platz, auf dem in ihrem Glanze
Gewandte Tapferkeit ſich zeigen ſollte,
Umſchloß ein Kreis wie ihn die Sonne nicht
So bald zum zweitenmal beſcheinen wird.
Es ſaßen hier gedrängt die ſchönſten Frauen,
Gedrängt die erſten Männer unſrer Zeit.
Erſtaunt durchlief der Blick die edle Menge;
Man rief: Sie alle hat das Vaterland,
Das Eine, ſchmale, meerumgebne Land,
Hierher geſchickt. Zuſammen bilden ſie
Das herrlichſte Gericht, das über Ehre,
Verdienſt und Tugend je entſchieden hat.

Goethe: Taſſo.

When did Goethe begin to write his 'Tasso'? and at what time did he change the original prose form into verse?

(*b*) Meine Collegia beſuchte ich anfangs emſig und treulich; die Philoſophie wollte mich jedoch keineswegs aufklären. * * * Hierzu kamen noch die Jeremiaden, mit denen uns Gellert in ſeinem Practicum von der Poeſie abzumahnen pflegte. Er wünſchte nur proſaiſche Aufſätze und beurtheilte auch dieſe immer zuerſt. Die Verſe behandelte er nur als eine traurige Zugabe; und was das Schlimmſte war, ſelbſt meine Proſa fand wenig Gnade vor ſeinen Augen: denn ich pflegte, nach meiner alten Weiſe, immer einen kleinen Roman zum Grunde zu legen, den ich in Briefen auszuführen liebte. Die Gegenſtände waren leidenſchaftlich, der Stil ging über die gewöhnliche Proſa hinaus, und der Inhalt mochte freilich nicht ſehr für eine tiefe Menſchenkenntniß des Verfaſſers zeugen.

Goethe: Aus meinem Leben.

For which of his works did Goethe use the epistolary form?

(*c*) Wallenſtein. Die Treue, ſag' ich Euch,
Iſt jedem Menſchen, wie der nächſte Blutsfreund,
Als ihren Rächer fühlt er ſich geboren.
Der Secten Feindſchaft, der Parteien Wuth,
Der alte Neid, die Eiferſucht macht Friede,
Was noch ſo wüthend ringt, ſich zu zerſtören,
Verträgt, vergleicht ſich, den gemeinen Feind
Der Menſchlichkeit, das wilde Thier zu jagen,
Das mordend einbricht in die ſichre Hürde,
Worin der Menſch geborgen wohnt — denn ganz
Kann ihn die eigne Klugheit nicht beſchirmen.
Nur an die Stirne ſetzt' ihm die Natur
Das Licht der Augen, fromme Treue ſoll
Den bloßgegebnen Rücken ihm beſchützen.
Gräfin. Denk' von dir ſelbſt nicht ſchlimmer, als der Feind,
Der zu der That die Hände freudig bietet.

So zärtlich dachte jener Karl auch nicht,
Der Oehm und Ahnherr dieſes Kaiſerhauſes,
Der nahm den Bourbon auf mit offnen Armen,
Denn nur von Nutzen wird die Welt regiert.
Schiller: Wallenſtein.

Explain the historical allusion in the above speech of the Countess Terzky.

(*d*) Ehe wir ihn (Philipp II.) handeln ſehen, müſſen wir einen flüchtigen Blick in ſeine Seele thun, und hier einen Schlüſſel zu ſeinem politiſchen Leben aufſuchen. Freude und Wohlwollen fehlten in dieſem Gemüthe. Jene verſagten ihm ſein Blut und ſeine frühen finſtern Kinderjahre; dieſes konnten Menſchen ihm nicht geben, denen das ſüßeſte und mächtigſte Band an die Geſellſchaft mangelte. Zwei Begriffe, ſein Ich, und was über dieſem Ich war, füllten ſeinen dürftigen Geiſt aus. Egoismus und Religion ſind der Inhalt und die Ueberſchrift ſeines ganzen Lebens. Er war König und Chriſt, und war beides ſchlecht, weil er beides vereinigen wollte; Menſch für Menſchen war er niemals, weil er von ſeinem Selbſt nur aufwärts, nie abwärts ſtieg. Sein Glaube war grauſam und finſter, denn ſeine Gottheit war ein ſchreckliches Weſen. Er hatte nichts mehr von ihr zu empfangen, aber zu fürchten. Dem geringen Mann erſcheint ſie als Tröſterin, als Erretterin; ihm war ſie ein aufgeſtelltes Angſtbild, eine ſchmerzhafte, demüthigende Schranke ſeiner menſchlichen Allmacht. Seine Ehrfurcht gegen ſie war um ſo tiefer und inniger, je weniger ſie ſich auf andere Weſen vertheilte. Er zitterte knechtiſch vor Gott, weil Gott das Einzige war, wovor er zu zittern hatte. Karl der Fünfte eiferte für die Religion, weil die Religion für ihn arbeitete; Philipp that es, weil er wirklich an ſie glaubte. Der Kaiſer war Barbar aus Berechnung, ſein Sohn aus Empfindung. Der Erſte war ein ſtarker und aufgeklärter Geiſt, aber vielleicht ein deſto ſchlimmerer

Menſch; der Zweite war ein beſchränkter und ſchwacher Kopf, aber er war gerechter.

Schiller: Abfall der Niederlande.

When did Schiller write his „Geſchichte des Abfalls der Niederlande“? Which of his previous compositions led him to the study of that period?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

GERMAN.

Examiner: Prof. C. A. Buchheim, Ph.D., F.C.P.

PAPER *b*.

I. *German Philology.*

1. Give Schleicher's view of the four principal periods of the German language. In which period did the *second consonantal change* (Zweite Lautverſchiebung) take place? and in which dialect did it most completely manifest itself?

2. What general vowel-change characterizes the transition from Old High German to Middle High German? Give instances of that variation, and state whether a similar variation is to be met with in other Aryan languages.

3. Explain and illustrate by examples the difference between Inlaut, Auslaut, Ablaut, and Umlaut. Does the full development of the Umlaut in High German coincide with that in other Teutonic languages?

4. Give the Teutonic origin of the following words now used in German as French expressions:—Garderobe, Equipage, Staffette, Etape, Breſche, Etiquette, Bivouac, Schatulle, bleſſieren, blockieren, Scharmützel, garnieren, Hellebarde, Bankett.

[*Turn over.*

II. *German Literature.*

[The following questions should be answered in German.]

1. Wer waren die ſogenannten Anakreontiker in Deutſchland, und welcher von ihnen wurde zu den Preußiſchen Dichtern gezählt?

2. Ueber den Göttinger Hainbund. Wie ſo entſtand derſelbe und wer waren deſſen vorzüglichſte Mitglieder?

3. Ueber die Sturm- und Drängperiode. Wer waren die Hauptvertreter derſelben, und in welchen Werken von Schiller und Goethe ſind Spuren jener literariſchen Richtung zu finden?

4. Ueber Jean Paul und deſſen Einfluß auf die deutſche Literatur.

5. Entſtehung und Tendenz der Romantiſchen Schule. Wer waren die vorzüglichſten Vertreter derſelben?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

GENERAL HISTORY AND POLITICAL ECONOMY.

PAPER *a*. HISTORY OF ENGLAND FROM 1790 TO 1850.

Examiner: Rev. W. CUNINGHAM, B.D., D.Sc.

[*Not more than* eight *questions to be answered by any one Candidate.*]

1. Give some account of the steps which brought about the union of Ireland to England, explain the terms of union, and discuss the wisdom of the measure in the light of the present day.

2. Explain carefully the events which led to the declaration of war between England and France in 1793. How far can the course adopted by England be justified?

3. Give some account of the disputes in regard to the mode of settling wages which occurred in England at the beginning of the century, and explain the nature of the course finally adopted.

4. Write a brief history of (*a*) the principal additions to the national debt, and (*b*) the chief alterations in the raising of revenue during this period.

[*Turn over.*

5. Under what disabilities did Catholics, Dissenters, and Jews labour at the beginning of the present century? What steps were taken to remove these disabilities during the first half of it?

6. Explain clearly the grounds on which the Reform Bill of 1832 was opposed. Discuss how far the opposition was (*a*) clear-sighted and (*b*) judicious.

7. Trace the influence of the French Revolutions upon contemporary politics in England.

8. Write a brief account (*a*) of the Maynooth Grant, (*b*) the disruption and (*c*) the Resumption of Cash Payments.

9. What additions were made to English territory during this period? Under what circumstances did these additions occur, and by what treaties were they respectively secured?

10. Explain carefully Cobden's view on Foreign and Colonial Policy, and show its importance in connexion with the Anti-Corn Law Legislation.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

MATHEMATICS.

PAPER *c*. ELEMENTARY MECHANICS AND HYDROSTATICS.

Examiner: Prof. C. NIVEN, F.R.S.

1. Find the resultant of any number of forces acting on a rigid body in a plane at one given point.

Three equal forces act from the angles of a triangle to the centre of the circumscribing circle; prove that the resultant passes through the centre of gravity of the triangle.

2. Define the moment of a force, and prove that the moment about any point of the resultant of any forces in one plane is equal to the algebraic sum of the moments of the forces about the same point.

3. Define the centre of gravity of a body, and prove that the work done by gravity on a system of bodies in motion is the same as if the whole system were condensed into the centre of gravity.

Four uniform heavy rods a, a, $2a$, $2a$, are formed into a reentrant polygon, the reentrant angle being formed by the two smaller rods. If the figure balance about this angular point in any position, find the angle.

4. State the usual laws of friction, and explain whether they are all independent; find the force required to pull a body up a given rough inclined plane.

A rough hoop in the form of a parabola is fixed with its plane

[*Turn over.*

vertical and axis inclined at an angle a to the vertical; and a heavy rod rests inside it in contact with the hoop, the coefficient of friction being tan λ. If in the limiting position of equilibrium, the rod passes through the focus, prove that $a=2\lambda$.

5. Investigate the theory of Atwood's machine.

A weight P descends vertically drawing Q up an inclined plane by a string which passes over a pulley at the top of the plane; determine the motion. What part of P's weight must be taken from it, without interfering with its velocity, when it has pulled Q half up the plane, that Q may just reach the top of the plane?

6. Find the range of a projectile on an inclined plane passing through the point of projection.

Two particles are projected from the same point of a plane of inclination i, with equal velocity u, and in directions perpendicular to each other, so as to have equal times of flight. Show that the difference of their ranges bears to their sum a ratio $=\tan i$.

7. Distinguish the whole pressure from the resultant pressure, and explain how each is to be found.

A weightless cylinder is filled with water and hung up by a string attached to a point on the rim of one of the ends; compare the whole pressure and resultant pressure on the curved surface.

8. Show how to determine the conditions of equilibrium of a body at rest in a liquid and supported in any manner.

A long cone, of density ρ, whose thickness is everywhere inconsiderable compared to its length, and which is loaded at the thick end, rests with this end on the bottom of a pond and the other end sticking out of the water; prove that the fraction x of the rod uncovered is given by $3x^4-4x^3+1=\rho$.

9. Explain how Boyle's Law for gases may be verified experimentally. What connection is there between it and Dalton's Law?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

PHYSICAL SCIENCE.

PAPER *b* (1). Sound and Light.

Examiner: Prof. Silvanus P. Thompson, D.Sc., B.A.

1. What do you know of partial tones? How is their existence in the note of a musical instrument demonstrated? What part do they play in the theory of consonance and dissonance?

2. Discuss the reflexion of waves of condensation and of rarefaction at the end of a tube through which the wave has been transmitted, (*a*) when the end of the tube is stopped, (*b*) when it is open. Deduce the laws connecting the frequency of the notes of stopped and of open organ-pipes with their lengths.

3. Give some account of the optical method of tuning.

4. Describe the phenomena of phosphorescence and fluorescence, distinguishing carefully between the two. Explain Becquerel's method of applying phosphorescent bodies to investigate the infra-red region of the spectrum.

5. State the laws of refraction of light, and explain them briefly in accordance with the wave-theory. Give Huygens' construction for a refracted ray.

[*Turn over.*

6. Light passes from a medium whose refractive index is μ to one whose index is μ', through a surface whose radius of curvature is r. Suppose the focus of the incident pencil to be at distance x from the centre of curvature of the surface, calculate the distance of the focus of the refracted pencil from the same point.

7. Describe the necessary arrangements for obtaing a pure spectrum, the source of light being a narrow slit in front of a luminous object. State and explain the differences that exist between the spectrum as produced by a prism and that produced by a grating.

8. How is the index of refraction of an opaque solid measured? What is the relation between the refractive index of a substance and the percentage of light which it reflects (at perpendicular incidence) at its surface?

9. Explain the phenomenon of the rainbow, and in particular show (1) why the colours of the secondary bow are in reverse order to those of the primary, (2) why the space between the two bows is darker than the rest of the sky, (3) why we do not see the Fraunhofer lines in the rainbow.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

PHYSICAL SCIENCE.

PAPER *b* (2). ELECTRICITY AND MAGNETISM.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. State the laws of Ohm and of Joule respecting electric currents, and illustrate them by numerical examples. Deduce the latter law from the former and from the definition of electric potential.

2. The electro-chemical equivalent of zinc is 0·00063364 grammes per coulomb; that of copper is 0·0003261. The heat of oxidation of zinc is 1313 calories per gramme; that of copper is 661 calories. Calculate from these facts the difference of potential in a cell containing zinc, copper, and an oxidising liquid. (Assume $J=42 \times 10^6$, and 1 volt$=10^8$ C.G.S. units.)

3. State the relation between potential, capacity, and charge, of an isolated electrified sphere. Suppose such a sphere to be connected to earth by a wire of very high resistance, show that it may still be maintained at a constant potential if it shrink with a certain constant velocity; and show also that the reciprocal of the velocity of diminution of its radius is proportional to the resistance of the wire.

4. How would you measure the magnetic moment of a magnet? Why is it more important to know the value of the magnetic moment of a magnet than to know the strength of its poles? What effect has heat upon the magnetic moment of a magnet?

[*Turn over.*

5. Describe a modified form of galvanometer suitable for measuring rapidly-alternating currents such as those generated in the secondary circuit of an induction coil.

6. What is a condenser? Describe the kind of condensers used in cable-signalling, and state why these instruments are necessary in cable work.

7. Explain the nature of the coefficients of mutual induction and of self-induction. Show that the coefficient of mutual induction between two circuits will be of the form,

$$\iint \frac{\cos \epsilon}{r} \, ds \, ds',$$

where the integration has to be carried round each of the circuits whose elements respectively are ds and ds'.

8. Describe some form of dynamo-electric machine suitable for working incandescent lamps on a system of parallel mains.

How can the dynamo be arranged *in theory* so as to keep the mains at a uniform difference of potential? And how is this done *in practice*?

9. What is meant by the Peltier-effect? How do you account for the fact that the thermo-electromotive force of an iron and copper junction reverses at a temperature of about 280° C?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

PHYSICAL SCIENCE.

PAPER *e* (1). HEAT.

Examiner: Prof. SILVANUS P. THOMPSON, D.Sc., B.A.

1. Why is there a difference between the apparent specific heat of air and its true specific heat? How can the ratio of the two be experimentally obtained?

2. Assume the value of the above ratio to be 1·405 : 1; assume also that the true specific heat of air is 0·23754 calories per gramme per degree (Centigrade); that the coefficient of expansion of air by heat is 0·003667 per degree; and that its density is 0·00129. From these data show how to calculate the mechanical equivalent of heat. (N.B. The calorie is the amount of heat required to warm one gramme of water one degree of the Centigrade scale.)

3. Assume 1 centimetre = 0·3937 inch; 1 gramme = 15·432 grains; acceleration of gravity at Manchester = 981·3 (centimetres per second per second). From these data calculate the value of Joule's equivalent in ergs per calorie taking as your basis Joule's statement that the heat required to warm 1 pound of water 1 degree *Fahrenheit* is mechanically equivalent to 773·65 foot-pounds.

[*Turn over.*

4. Describe De Senarmont's method of investigating the thermal conductivity of crystals, and briefly recount his results.

5. Give the calculations necessary to apply in deducing the specific heat of a substance from experiments made in using an ice-calorimeter. Describe the ice-calorimeter of Lavoisier and also that of Bunsen.

6. Give a sketch of the kinetic theory of gases.

7. Explain by the kinetic theory of gases:—
   (*a*) the action of Crookes's radiometer.
   (*b*) the cooling effect of a current of air.
   (*c*) the "black plane" seen surrounding hot bodies when brightly illuminated.
   (*d*) why a drop of cold water dropped upon a red hot silver plate runs about over the surface of the latter without touching it and with a visible space between.

8. What is an adiabatic? What is an isothermal? Are the conditions presupposed in the use of these terms in the theory of the heat-engine ever realised? If not, why?

9. Suppose a line A B to be drawn on a pressure-volume diagram, and through A and B respectively two adiabatics are drawn and continued indefinitely in the positive direction relatively to the volume-axis; show that the area enclosed between A B and these adiabatics measures the heat imparted or withdrawn during the operation which is represented by the line A B. What is the rule for signs in such operations?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

CHEMISTRY.

PAPER *a*.

Examiner: Prof. W. A. Tilden, D.Sc., F.R.S.

1. How would you prepare *pure* nitric oxide, and how would you prove by experiment that this compound contains half its volume of nitrogen and that its molecule is NO and not N_2O_2?

2. How did Graham obtain the soluble varieties of silicic acid and ferric hydroxide? Give some account of their properties.

3. How could you obtain phosphoric acid from the following phosphates:—*a*, bone ash; *b*, common sodium phosphate; *c*, aluminium phosphate?

4. What substances other than ozone have the power of liberating iodine from iodide of potassium, and how are they distinguished from ozone?

5. A mixture of chloride and bromide of potassium gave with nitrate of silver a precipitate of mixed chloride and bromide which weighed 1·179 gram, and when reduced gave ·720 gram metallic silver. What quantities of KCl and KBr respectively did the mixture contain?

6. What are the general properties of aldehyds, and in what respects do the aldehyds of the aromatic series, *e.g.* benzaldehyd, differ from those of the acetic series?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

CHEMISTRY.

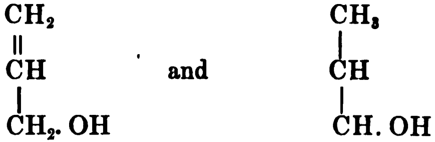
PAPER *b*.

Examiner: Prof. W. A. Tilden, D.Sc., F.R.S.

1. How are the fluorides of silicon, arsenic, and phosphorus obtained? Describe briefly their properties.

2. By what means was it discovered that alizarin is a derivative of anthracene, and by what successive operations is alizarin manufactured from coal tar?

3. Choose between the formulæ



$$\begin{array}{c} CH_2 \\ \| \\ CH \\ | \\ CH_2.OH \end{array} \quad \text{and} \quad \begin{array}{c} CH_3 \\ | \\ CH \\ | \\ CH.OH \end{array}$$

for allylic alcohol, justifying your choice by reference to the properties of the compound.

4. What is understood by specific or molecular volume, and what are the chief general conclusions adopted concerning the specific volumes of liquids?

5. Give a sketch of the scientific work of Sir Humphry Davy.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

GEOLOGY, MINERALOGY, AND PALÆONTOLOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *a*.

1. Make a sketch-map and section of some part of Europe or of the British Isles, carefully indicating the Geological Formations concerned.

2. Show by notes, based on the preceding map and section, how far, and why, the Geological Structure influences the Physical Features of a Country.

3. In diagrams show, by different degrees of curvature and crumpling, how strata are thrown into *undulations* and *inversions*, with the accompaniment of *cleavage* and *foliation*. Explain these phenomena, and apply them briefly to the elucidation of *mountain-structure*.

4. Draw up a classification of rock-forming Minerals, as (1) ores and accessory ingredients; (2) magnesian and ferruginous silicates; (3) felspathic constituents; (4) silica, in its varieties.

[*Turn over.*

5. How do Plants and Animals promote the *disintegration* of Rocks?

6. Draw up a Table of the Equivalent Formations, in Europe, North America, India, and New Zealand, of either the *Mesozoic* or the *Palæozoic* System.

7. Tabulate the chief genera of Brachiopods, according to their Families, with their range in time and space.

8. What evidences exist of *oscillations* in the Level of Sea and Land? What causes have been suggested for the Upheaval and Depression of Land?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

GEOLOGY, MINERALOGY, AND PALÆONTOLOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *b*.

1. Give an account, with sketch-map, of the Isthmus of Auckland and its Extinct Volcanoes.

2. Tabulate the British Tertiary Rocks, with their foreign equivalents.

3. Give some account of the Geological Formations, in Britain and elsewhere, which are richest in Corals, Fishes, and Mammalia respectively.

4. Make a sketch-map and a section of a piece of ground with strata *variously-inclined*, *broken*, *outlying*, *inlying*, and *overlapping*; and indicate how far such conditions, as shown, are favourable or otherwise in *vein-mining*, *bed-mining*, and *water-supply*.

[*Turn over.*

5. Enumerate the chief Sandstones and Conglomerates of the Geological Series; state what they consist of, and what deductions you draw from their study as to the history of the Formations in which they occur.

6. Describe the following Rocks:—Dolerite, Lherzolite, Leptinite, Lydite, and Diorite, both macroscopically and microscopically.

7. Enumerate the mineral species of the Felspar family; and describe the most important.

8. What is meant by "Fluid Cavities" and allied phenomena in the substance of crystals? What deductions have been drawn from the study of their condition and contents?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *a*. GENERAL PRINCIPLES.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Are the Bacteria to be regarded as plants or as animals? Give reasons for your answer and give a sketch of the part played by Bacteria in the economy of nature.

2. What is the actual difference between warm-blooded and cold-blooded animals? What is the cause of warm-bloodedness? How is the temperature of the body regulated?

3. What is the mechanism of the movements of the sensitive plant (*Mimosa pudica*)?

4. State the characteristic features of deep-sea organisms, of pelagic organisms, of littoral organisms, and of terrestrial, fluviatile, and lacustrine organisms.

5. What is Mr. Darwin's "theory of pangenesis"?

6. What is the essential character of nerve? Give an account of the simplest nervous apparatus known to you, and describe the embryonic development of the nervous system of a vertebrate.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *b* (1). Zoology.

Examiner: Prof. E. Ray Lankester, M.A., F.R.S.

1. Discuss the relationship to the Vertebrata of Ascidians and of *Balanoglossus*.

2. What are the structural differences between Man and the Higher Apes? Do these justify the separation of Man in zoological classification from the Catarrhine Monkeys?

3. Describe the structure of the eye in the following animals:—*Hirudo, Patella, Helix, Nautilus, Sepia, Scorpio, Limulus, Blatta, Amphioxus, Ascidia* (larva), *Homo*.

4. Give an account of the anatomy and development of *Peripatus*—and point out the exceptional characters of this animal as an archaic Arthropod.

[*Turn over.*

5. Describe the anatomy and development of *one* of the following:—*Amphioxus*, *Comatula* (*Antedon*), *Apus*, *Limnaeus*.

6. How do Reptiles, Birds, and Mammals collectively differ in structure from the lower Vertebrata? and how do Reptiles and Birds agree with one another in structure and differ from Mammals?

7. Describe the instances of true Parthenogenesis met with in the animal kingdom. Explain the terms "Pædogenesis," and "alternation of generations."

NIVERSITY OF NEW ZEALAND.

AMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

PAPER *b* (2). BOTANY.

Examiner: S. H. VINES, M.A., D.Sc.

1. Describe the forms in which (*a*) the non-nitrogenous, and the nitrogenous reserve-materials of plants are deposited. Mention the organs in which reserve-materials are most mmonly stored, and describe any striking cases of special dification which such organs undergo.

2. Describe and explain the structure of any Lichen. What is known as to the occurrence of a sexual process in chens?

3. Give a detailed account of the process of "free cells rmation" in any case with which you may be acquainted. Point out fully the differences between free cell-formation and nple cell-division.

4. Give an explanation, based upon development, of the structure of the flower in the following cases:—

a. Cruciferæ.
b. Primulaceæ.
c. Geraniaceæ *or* Rutaceæ.

[*Turn over.*

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

GEOLOGY, MINERALOGY, AND PALÆONTOLOGY.

Examiner: Prof. T. RUPERT JONES, F.R.S., F.G.S.

PAPER *a*.

1. Make a sketch-map and section of some part of Europe or of the British Isles, carefully indicating the Geological Formations concerned.

2. Show by notes, based on the preceding map and section, how far, and why, the Geological Structure influences the Physical Features of a Country.

3. In diagrams show, by different degrees of curvature and crumpling, how strata are thrown into *undulations* and *inversions*, with the accompaniment of *cleavage* and *foliation*. Explain these phenomena, and apply them briefly to the elucidation of *mountain-structure*.

4. Draw up a classification of rock-forming Minerals, as (1) ores and accessory ingredients; (2) magnesian and ferruginous silicates; (3) felspathic constituents; (4) silica, in its varieties.

[*Turn over.*

5. How do Plants and Animals promote the *disintegration* of Rocks?

6. Draw up a Table of the Equivalent Formations, in Europe, North America, India, and New Zealand, of either the *Mesozoic* or the *Palæozoic* System.

7. Tabulate the chief genera of Brachiopods, according to their Families, with their range in time and space.

8. What evidences exist of *oscillations* in the Level of Sea and Land? What causes have been suggested for the Upheaval and Depression of Land?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

Geology, Mineralogy, and Palæontology.

Examiner: Prof. T. Rupert Jones, F.R.S., F.G.S.

PAPER *b*.

1. Give an account, with sketch-map, of the Isthmus of Auckland and its Extinct Volcanoes.

2. Tabulate the British Tertiary Rocks, with their foreign equivalents.

3. Give some account of the Geological Formations, in Britain and elsewhere, which are richest in Corals, Fishes, and Mammalia respectively.

4. Make a sketch-map and a section of a piece of ground with strata *variously-inclined, broken, outlying, inlying,* and *overlapping*; and indicate how far such conditions, as shown, are favourable or otherwise in *vein-mining, bed-mining,* and *water-supply.*

[*Turn over.*

5. Enumerate the chief Sandstones and Conglomerates of the Geological Series; state what they consist of, and what deductions you draw from their study as to the history of the Formations in which they occur.

6. Describe the following Rocks:—Dolerite, Lherzolite, Leptinite, Lydite, and Diorite, both macroscopically and microscopically.

7. Enumerate the mineral species of the Felspar family; and describe the most important.

8. What is meant by "Fluid Cavities" and allied phenomena in the substance of crystals? What deductions have been drawn from the study of their condition and contents?

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *a*. GENERAL PRINCIPLES.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Are the Bacteria to be regarded as plants or as animals? Give reasons for your answer and give a sketch of the part played by Bacteria in the economy of nature.

2. What is the actual difference between warm-blooded and cold-blooded animals? What is the cause of warm-bloodedness? How is the temperature of the body regulated?

3. What is the mechanism of the movements of the sensitive plant (*Mimosa pudica*)?

4. State the characteristic features of deep-sea organisms, of pelagic organisms, of littoral organisms, and of terrestrial, fluviatile, and lacustrine organisms.

5. What is Mr. Darwin's "theory of pangenesis"?

6. What is the essential character of nerve? Give an account of the simplest nervous apparatus known to you, and describe the embryonic development of the nervous system of a vertebrate.

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.—BIOLOGY.

PAPER *b* (1). ZOOLOGY.

Examiner: Prof. E. RAY LANKESTER, M.A., F.R.S.

1. Discuss the relationship to the Vertebrata of Ascidians and of *Balanoglossus*.

2. What are the structural differences between Man and the Higher Apes? Do these justify the separation of Man in zoological classification from the Catarrhine Monkeys?

3. Describe the structure of the eye in the following animals:—*Hirudo, Patella, Helix, Nautilus, Sepia, Scorpio, Limulus, Blatta, Amphioxus, Ascidia* (larva), *Homo*.

4. Give an account of the anatomy and development of *Peripatus*—and point out the exceptional characters of this animal as an archaic Arthropod.

[*Turn over.*

5. Describe the anatomy and development of *one* of the following :—*Amphioxus, Comatula* (*Antedon*), *Apus, Limnæus.*

6. How do Reptiles, Birds, and Mammals collectively differ in structure from the lower Vertebrata? and how do Reptiles and Birds agree with one another in structure and differ from Mammals?

7. Describe the instances of true Parthenogenesis met with in the animal kingdom. Explain the terms "Pædogenesis," and "alternation of generations."

UNIVERSITY OF NEW ZEALAND.

EXAMINATION FOR SENIOR SCHOLARSHIPS, 1885.

NATURAL SCIENCE.

PAPER *b* (2). BOTANY.

Examiner: S. H. VINES, M.A., D.Sc.

1. Describe the forms in which (*a*) the non-nitrogenous, and (*b*) the nitrogenous reserve-materials of plants are deposited.
Mention the organs in which reserve-materials are most commonly stored, and describe any striking cases of special modification which such organs undergo.

2. Describe and explain the structure of any Lichen.
What is known as to the occurrence of a sexual process in Lichens?

3. Give a detailed account of the process of "free cells formation" in any case with which you may be acquainted.
Point out fully the differences between free cell-formation and simple cell-division.

4. Give an explanation, based upon development, of the structure of the flower in the following cases:—

a. Cruciferæ.
b. Primulaceæ.
c. Geraniaceæ *or* Rutaceæ.

[*Turn over.*

5. Give an account of the mechanism by which the excretion of water in drops, commonly to be observed in the leaves of plants, is effected. In what respects does the mechanism of the excretion of nectar by nectaries differ from this ?

6. Describe the structure of the ovule of any Angiosperm at the time of fertilization. Describe the process of fertilization. Give an account of the changes which the ovule undergoes in its conversion into the seed.

What stages in the life-history of the plant are represented in the seed ?

7. Give a comparative account of the development from the oospore of the sporogonium of any Liverwort (Hepaticæ), and of any Moss (Musci).

8. Describe the mode of growth in thickness of the stems and roots of Dicotyledons. In what respects does the mode of growth in thickness of the stems of the arborescent Liliaceæ differ from this ?

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1885.

ROMAN LAW.

Examiner: W. A. HUNTER, M.A., LL.D.

1. By what principles was the ownership determined when land or moveables became an accession to land, and in what cases was compensation given to the person who lost his property?

2. Explain and illustrate the following maxims:—
Falsa causa non nocet.
Falsa demonstratio non nocet.

3. State and criticize the classification of contracts contained in the Institutes of Justinian.

4. In what several ways could a contract of suretyship be formed? Point out the different effects of the several forms.

5. In what way were *codicilli* utilized to overcome the inconveniences of the *testamentum*?

6. Explain the following *exceptiones*:—*cognitoria, dilatoria, jusjurandi, non numeratæ pecuniæ, pacti conventi, rei judicatæ, rei residuæ.*

[*Turn over.*

7. Sketch the history of Appeals in Civil causes.

8. Explain the steps in the development of the Roman Law of mortgage.

9. Si quis duobus bona fide serviat, utrique adquiret, sed singulis in re sua. Quod autem in re alterius est, utrum pro parte ei cui bona fide servit, an vero ei debeat adquirere totum ex cujus re est, videamus. Quam speciem Scævola quoque tractat libro secundo quæstionum: ait enim, si alienus servus duobus bona fide serviat et ex unius eorum re adquirat, rationem facere, ut ei dumtaxat in solidum adquirat. Sed si adjiciat ejus nomen ex cujus re stipulatur, nec dubitandum esse ait, quin ei soli adquiratur, quia et si ex re ipsius stipularetur alteri ex dominis nominatim stipulando solidum ei adquiret, et in inferioribus probat, ut, quamvis non nominatim nec jussu meo, ex re tamen mea stipulatus sit, cum pluribus bona fide serviret, mihi soli adquirat. Nam et illud receptum est ut quotiens communis servus omnibus adquirere non potest ei soli eum adquirere cui potest.

Translate and comment.

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1885.

INTERNATIONAL LAW.

Examiner: Prof. W. A. Hunter, M.A., LL.D.

1. State the chief provisions of the Foreign Enlistment Act. To what extent are its provisions part of International Law?

2. Give an account of the steps by which Turkey obtained the acknowledged right to exclude vessels from passing in or out of the Black Sea.

3. What acts are necessary and sufficient to give a title to sovereignty to newly discovered countries?

4. Indicate the international questions that may arise as to the use of interoceanic canals, and the principles of International Law applicable to their solution.

5. What acts amount to a violation of blockade? What is the practice of France in regard to Notice? On what principle is the law of blockade based?

[*Turn over.*

6. State briefly the points that arose for discussion in "the affair of Terceira" 1829; the seizure of Messrs. Mason and Slidell, 1861; the "slave circular" of 1875; the mail-packet *Parlement Belge.*

7. State, citing authorities, the rules by which an English court will be guided in determining a question of legitimacy involving private International Law.

8. State briefly the facts and principles of discussion in the following cases:—Lloyd *v.* Guilbert; Peninsular and Oriental Co. *v.* Shand; Udny *v.* Udny; Harvey *v.* Farney.

9. Discuss the questions of International Law arising out of the case of Martin Koszta.

UNIVERSITY OF NEW ZEALAND.

SECOND LL.B. EXAMINATION, 1885.

CONTRACTS AND TORTS.

Examiner: **Edmund Robertson, M.A.**

(*Only* eight *questions to be answered.*)

1. A contracts with B to pay money to C. Can C, under any circumstances, acquire a right against A on such a contract? Can you compare the English rule on this point with that of any other country?

2. What is a "common carrier"? What are his principal obligations? and how far may they be modified by special contract?

3. When are contracts of a corporation said to be *ultra vires*? In what circumstances may *ultra vires* contracts be enforceable?

4. What is a wager? Give a synopsis of the law applicable to agreements of this character.

5. Discuss the conditions under which one person may become liable for a tort committed by another.

6. A (landlord) and B (tenant) enter into a lease of land for a term of years with a rent reserved. What is the measure of damages when (1) A refuses to give possession, (2) B deserts possession and refuses to pay rent?

7. Give examples of "that redress of private injuries which is obtained by mere act of parties."

8. What are the remedies sought by actions of *debt, covenant, assumpsit, trespass, trespass* on the case, and *replevin*?

9. *Interest reipublicæ ut sit finis litium.* Show how this principle is applied in English law.

10. What are the risks usually insured against in an ordinary policy of marine insurance? and what are its implied conditions?

UNIVERSITY OF NEW ZEALAND.

THIRD LL.B. EXAMINATION, 1885.

REAL AND PERSONAL PROPERTY.

Examiner: **Edmund Robertson**, M.A.

1. State exactly the position of an alien with reference to the acquisition of real property at common law and at the present time.

2. Define the rights of a tenant for life of lands as compared with an owner on fee simple.

3. Sketch the history of the law of entail in England.

4. Give the leading rules of descent, noting departures from the common law.

5. What is a contingent remainder, and under what conditions may it be created?

6. State the leading steps in the history of English law as to wills of real estate.

7. Quote the provisions of the Statute of Frauds with respect to the sale of goods, noting the questions which have arisen thereon, and how they have been decided.

8. What was the origin of Copyright in England? What are its present limits? Compare any other analogous rights.

9. Define specific, demonstrative, and general legacies, and point out their differences in effect.

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1885.

ROMAN LAW.

Examiner: W. A. HUNTER, M.A., LL.D.

1. By what principles was the ownership determined when land or moveables became an accession to land, and in what cases was compensation given to the person who lost his property?

2. Explain and illustrate the following maxims:—
Falsa causa non nocet.
Falsa demonstratio non nocet.

3. State and criticize the classification of contracts contained in the Institutes of Justinian.

4. In what several ways could a contract of suretyship be formed? Point out the different effects of the several forms.

5. In what way were *codicilli* utilized to overcome the inconveniences of the *testamentum*?

6. Explain the following *exceptiones*:—*cognitoria, dilatoria, jusjurandi, non numeratæ pecuniæ, pacti conventi, rei judicatæ, rei residuæ.*

[*Turn over.*

7. Sketch the history of Appeals in Civil causes.

8. Explain the steps in the development of the Roman Law of mortgage.

9. Si quis duobus bona fide serviat, utrique adquiret, sed singulis in re sua. Quod autem in re alterius est, utrum pro parte ei cui bona fide servit, an vero ei debeat adquirere totum ex cujus re est, videamus. Quam speciem Scævola quoque tractat libro secundo quæstionum: ait enim, si alienus servus duobus bona fide serviat et ex unius eorum re adquirat, rationem facere, ut ei dumtaxat in solidum adquirat. Sed si adjiciat ejus nomen ex cujus re stipulatur, nec dubitandum esse ait, quin ei soli adquiratur, quia et si ex re ipsius stipularetur alteri ex dominis nominatim stipulando solidum ei adquiret, et in inferioribus probat, ut, quamvis non nominatim nec jussu meo, ex re tamen mea stipulatus sit, cum pluribus bona fide serviret, mihi soli adquirat. Nam et illud receptum est ut quotiens communis servus omnibus adquirere non potest ei soli eum adquirere cui potest.

Translate and comment.

UNIVERSITY OF NEW ZEALAND.

LL.B. EXAMINATION, 1885.

INTERNATIONAL LAW.

Examiner: Prof. W. A. Hunter, M.A., LL.D.

1. State the chief provisions of the Foreign Enlistment Act. To what extent are its provisions part of International Law?

2. Give an account of the steps by which Turkey obtained the acknowledged right to exclude vessels from passing in or out of the Black Sea.

3. What acts are necessary and sufficient to give a title to sovereignty to newly discovered countries?

4. Indicate the international questions that may arise as to the use of interoceanic canals, and the principles of International Law applicable to their solution.

5. What acts amount to a violation of blockade? What is the practice of France in regard to Notice? On what principle is the law of blockade based?

[*Turn over.*

6. State briefly the points that arose for discussion in "the affair of Terceira" 1829; the seizure of Messrs. Mason and Sliddell, 1861; the "slave circular" of 1875; the mail-packet *Parlement Belge*.

7. State, citing authorities, the rules by which an English court will be guided in determining a question of legitimacy involving private International Law.

8. State briefly the facts and principles of discussion in the following cases:—Lloyd *v*. Guilbert; Peninsular and Oriental Co. *v*. Shand; Udny *v*. Udny; Harvey *v*. Farney.

9. Discuss the questions of International Law arising out of the case of Martin Koszta.

UNIVERSITY OF NEW ZEALAND.

SECOND LL.B. EXAMINATION, 1885.

CONTRACTS AND TORTS.

Examiner: **Edmund Robertson**, M.A.

(*Only* eight *questions to be answered.*)

1. A contracts with B to pay money to C. Can C, under any circumstances, acquire a right against A on such a contract? Can you compare the English rule on this point with that of any other country?

2. What is a "common carrier"? What are his principal obligations? and how far may they be modified by special contract?

3. When are contracts of a corporation said to be *ultra vires*? In what circumstances may *ultra vires* contracts be enforceable?

4. What is a wager? Give a synopsis of the law applicable to agreements of this character.

5. Discuss the conditions under which one person may become liable for a tort committed by another.

6. A (landlord) and B (tenant) enter into a lease of land for a term of years with a rent reserved. What is the measure of damages when (1) A refuses to give possession, (2) B deserts possession and refuses to pay rent?

7. Give examples of "that redress of private injuries which is obtained by mere act of parties."

8. What are the remedies sought by actions of *debt, covenant, assumpsit, trespass, trespass* on the case, and *replevin*?

9. *Interest reipublicæ ut sit finis litium.* Show how this principle is applied in English law.

10. What are the risks usually insured against in an ordinary policy of marine insurance? and what are its implied conditions?

UNIVERSITY OF NEW ZEALAND.

THIRD LL.B. EXAMINATION, 1885.

REAL AND PERSONAL PROPERTY.

Examiner: **Edmund Robertson**, M.A.

1. State exactly the position of an alien with reference to the acquisition of real property at common law and at the present time.

2. Define the rights of a tenant for life of lands as compared with an owner on fee simple.

3. Sketch the history of the law of entail in England.

4. Give the leading rules of descent, noting departures from the common law.

5. What is a contingent remainder, and under what conditions may it be created?

6. State the leading steps in the history of English law as to wills of real estate.

7. Quote the provisions of the Statute of Frauds with respect to the sale of goods, noting the questions which have arisen thereon, and how they have been decided.

8. What was the origin of Copyright in England? What are its present limits? Compare any other analogous rights.

9. Define specific, demonstrative, and general legacies, and point out their differences in effect.

UNIVERSITY OF NEW ZEALAND.

THIRD LL.B. EXAMINATION, 1885.

LAW OF EVIDENCE.

Examiner: Edmund Robertson, M.A.

(*Only* eight *questions to be answered.*)

1. Can priests be compelled to disclose confessions made to them professionally? Give reasons for your answer.

2. What is meant by secondary evidence, and when may it be given? How would you prove the judgment of a colonial court in England?

3. Define and fully illustrate "estoppel en pais."

4. In what cases may evidence of character be offered? and when and how may the credit of a witness be impeached?

5. Classify the facts of which courts will take judicial notice.

6. What is the consequence of the improper admission or rejection of evidence in civil and criminal cases respectively?

[*Turn over.*

7. "Res inter alios acta alteri nocere non debet." Explain this maxim with reference to the Law of Evidence.

8. What is the force of a *subpœna duces tecum*? and what excuses for non-compliance will be sufficient?

9. How do the Stamp Acts affect the admissibility in evidence of documents? What documents do or do not require a stamp?

10. "Where a deed is thirty years old it proves itself." Explain this statement, making the necessary qualifications.

UNIVERSITY OF NEW ZEALAND.

THIRD LL.B. EXAMINATION, 1885.

CRIMINAL LAW.

Examiner: Edmund Robertson, M.A.

[*Only* eight *questions to be answered.*]

1. Define martial law. By whom, and under what circumstances, and with what responsibilty, may it be proclaimed?

2. Give a summary of the rules to be observed in drawing indictments.

3. Write a short historical account of perjury as a criminal offence.

4. Illustrate the position of the Star-Chamber in the history of the criminal law.

5. Summarize the criminal law relating to the fraudulent misappropriation of property.

6. Give a short account of *one* of the following trials:—John Donnellan, William Palmer, Thomas Smethurst.

7. Write short notes on the following:—benefit of clergy, *peine forte et dure*, malice aforethought.

[*Turn over.*

8. What are the criminal remedies for libel now available? Mention any points of difference between the civil and criminal liability.

9. Illustrate (if possible by reference to decided cases) the essential elements of *forgery*.

10. State generally what must be proved under an indictment for bigamy, and what defences will be sufficient.

UNIVERSITY OF NEW ZEALAND.

THIRD LL.B. EXAMINATION, 1885.

EQUITY.

Examiner: Edmund Robertson, M.A.

(*Only* eight *questions to be answered.*)

1. What is a mandatory injunction? In what class of cases will it be granted?

2. A trustee accepts a second trust incompatible with the first. Has the first *cestui que* trust any right to relief? and who should be parties to his suit?

3. In what circumstances may individual shareholders of a corporation sue on rights belonging to the corporation?

4. Explain fully what is meant by the "marshalling of securities."

5. A is surety to B for a debt due to B by C. What relief is A entitled to in a Court of Equity, and under what circumstances, against either B or C?

6. Discuss cases in which equity has relieved against hard bargains.

[*Turn over*

7. In what cases is a writing necessary to the constitution of a trust over land?

8. Can a trustee purchase the trust property for himself? Notice any cases in which the principle has been applied to relationships other than strict trust.

9. Give examples of proceedings "in the nature of a bill quia timet."

10. Give some account of the Thellusson Act.

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1885.

JURISPRUDENCE.

Examiner: W. A. Hunter, M.A., LL.D.

1. Examine the views of Sir Henry S. Maine as to the universality of *patria potestas.*

2. "After the decease of an individual, how ought his goods to be disposed of?" How does Bentham answer this question? Discuss his answer.

3. What attempts have been made, and with what success, to draw a line between the departments of human conduct to which legal sanction may properly be applied and those that should be left to the social sanction?

4. "Every owner has a right of possession:" criticize this statement.

5. Account for the origin of Equity as a distinctive branch of Jurisprudence.

6. Illustrate from the history of Criminal Law the influence of the respective ideas of "vengeance" and "repression of crime."

7. What is Feudalism? trace its growth and explain the causes of its decay.

8. Examine the bearing of Indian customary law on Austin's definition of law and sovereignty.

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1885.

ROMAN LAW.

Examiner: W. A. Hunter, M.A., LL.D.

1. Enumerate briefly but with precision the several modes in which a contract could be ended. Distinguish between *acceptilatio* and *pactum de non petendo* as modes of release.

2. What provisions existed in Roman Law to prevent fraudulent conveyances?

3. Give an account of the influence of Roman Law in England from the 12th to the 14th centuries.

4. What distinctions have been set up between Correality and Solidarity? Criticize them.

5. In what cases was *infamia* applied? What were the legal consequences of *infamia*?

6. Explain the following *pacta*:—*de constituenda dote,—adjecta in continenti,—de quota litis,—in rem,—protimesea.*

7. In exsecutione obligationis sciendum est quattuor causas esse: nam interdum est aliquid, quod a singulis heredibus divisum consequi possumus; aliud, quod totum peti necesse est nec divisum præstari potest: aliud quod pro parte petitur, sed solvi nisi totum non potest: aliud quod solidum petendum est, licet in solutionem admittat secutionem.
Translate, explain, and illustrate.

[*Turn over.*

8. *Translate the following and answer the questions* :—

(1) Rem mihi commodasti, eanden subripuisti : deinde cum commodati ageres, nec a te scirem esse subreptam, judex me condemnavit et solvi ; postea comperi a te esse subreptam. Quæsitum est, quæ mihi tecum actio sit?

(2) Si creditor, cum venderet pignus, duplam promisit (nam usu hoc evenerat) et conventus ob evictionem erat et condemnatus: an haberet regressum pigneratitiæ contrariæ actionis?

(3) Titius Seio epistulam emisit in hæc verba: "remanserunt apud me quinquaginta ex credito tuo, ex contractu pupillorum meorum, quos tibi reddere debebo Idibus Maiis probos: quod si ad diem supra scriptum non dedero, tunc dare debebo usuræ tot."
Quæro, an Lucius Titius in locum pupillorum hac cautione reus successerit? Item quæro, si non intercessisset stipulatio, de constituta teneatur?

(4) Cum in eadem nave mercium genera complures mercatores coegissent, prætereaque multi vectores servi liberique in ea navigarent, tempestate gravi orta, necessario jactura facta erat. Quæsita deinde sunt hæc: an omnes jacturam præstare oporteat, et si qui tales merces imposuissent, quibus navis non oneraretur, velut gemmas, margaritas? Et quæ portio præstanda est? Et an etiam pro liberis capitibus dari oporteat? Et qua actione ea res expediri possit?

9. *Translate and explain the terms of the following Prætorian Edict* :—

Si cujus quid de bonis, cum is metu aut sine dolo, reipublicæ causa abesset: inve vinculis, servitute hostiumque potestate esset: sive cujus actionis eorum cui dies exisse dicetur. Item si quis quid usu suum fecisset, aut quod non utendo amisit, consecutus; actioneve qua solutus ob id quod dies ejus exierit cum absens non defenderetur, inve vinculis esset, secumve agendi potestatem non faceret: aut cum eum invitum in jus vocari non liceret neque defenderetur: cumve magistratus de ea re appellatus esset sive cui pro magistratu, sine dolo ipsius actio exempta esse dicetur: earum rerum actionem intra annum, quo primum de ea re experiundi potestas erit. Item si qua alia mihi justa causa esse videbitur, in integrum restituam; quod ejus per leges, plebiscita, senatusconsulta, edicta, decreta principum, licebit.

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1885.

INTERNATIONAL LAW.

Examiner : Edmund Robertson, M.A.

1. Summarize the duties of neutrality, noting the more important controversies thereon.

2. What questions have arisen as to the true position in jurisprudence of International Law ?

3. How should the validity of a marriage be determined in a country different from that in which it was contracted ? Notice the most remarkable exceptions to the general rule.

4. Can you associate the progress of democratic institutions with any notable developments in international law or custom ?

5. What is the proper jurisdiction of a Court of Admiralty, and what is the international effect of its decisions ?

6. State the leading provisions of the " Naturalization Act, 1870."

[*Turn over.*

7. Distinguish (as regards their functions and authority) between the different classes of representatives of foreign powers.

8. What is the present state of International Law with regard to privateering?

9. Discuss the application of the *jus postliminii* in modern international law.

10. Note the principal provisions of the following treaties:—Treaty of Paris, 1856; Treaty of Washington, 1871; Treaty of Berlin, 1878.

UNIVERSITY OF NEW ZEALAND.

LL.D. EXAMINATION, 1885.

PRINCIPLES OF LEGISLATION.

Examiner: **Edmund Robertson, M.A.**

1. Ignorantia juris neminem excusat. Why and with what exceptions should this maxim prevail?

2. Discuss the question of the necessity of a "second chamber," referring to actual constitutions in illustration of your views.

3. Can you cite any examples of the successful imposition of constitutional restrictions on the authority of the Legislature?

4. Discuss the policy of rules of evidence whereby certain classes of witnesses are held incompetent.

5. In what cases has state interference with "freedom of contract" increased or diminished within the last fifty years, in England or its Colonies?

6. Sketch the outlines of a Scheme of Federation for the Colonies.

and Work of the Otago University." To render this work still more interesting and attractive, it was resolved to insert plates of the past and present Chancellors of the University, of the old University Buildings in Princes street (now the Colonial Bank buildings), of the present University buildings in Castle street, and of the Museum.

In order to aid the work of publication, necessitating as it did a large amount of expense, the Council of the Otago University generously voted the sum of £10 towards the cost of this issue. We beg here to thank them, in the name of the students, for their liberal grant, and to take it as an indication of the amicable relations which do, and we hope always will, exist between the Council and the students. The balance of the sum necessary to defray the expenses of publishing this number we hope to raise by sale and by private subscription.

The addresses delivered at the above-mentioned ceremony are here inserted consecutively under the heading "The Celebration of the Twenty-first Anniversary of the University of Otago." Dr. Fitchett's address on "University Education in other parts of New Zealand," being delivered from notes merely, and very insufficiently reported in the daily papers, we have been obliged, at his own request, to leave out. The other addresses are: "The Foundation of the Otago University," by Rev. Dr. Stuart; "The Growth and Work of the Otago University," by Dr. Shand; "Recent Changes in the Old English Universities," by Professor Sale; and "The Future of the Otago University," by Sir Robert Stout.

The University institutions whose histories are here detailed are: The Debating Society, the Students' Association, THE REVIEW, the Christian Alliance, the Dramatic Club, the Football Club, and the Lawn Tennis Club.

And here we must record our appreciation of the services of those who have aided us so much in this work by the readiness which they have shown in contributing the articles contained in this issue. We cannot adequately express our deep sense of gratitude to our contributors, who have cheerfully expended so much careful and earnest labour in the compilation of the articles here set forth.

In conclusion, we would remark that we have striven to render this little work, as far as possible, a complete epitome of the history of the University since its foundation, both as regards University work and University institutions. We have, we hope, embodied here a record, however brief and imperfect, of the first twenty-one years existence of our College ; and we re-echo the prayer of our worthy Chancellor that the "University of Otago, through the overruling Providence of Heaven, may flourish more and more as the years roll on, and contribute to the advancement of science and sound learning, the promotion of the material and moral interests of the colony, and the establishment of our people in the righteousness which exalteth the nation, and thus help forward the noble ends contemplated by its founders."

ADDRESSES DELIVERED AT THE

Celebration of the 21st Anniversary

◆

THE FOUNDATION OF THE OTAGO UNIVERSITY.

(By Rev. D. M. Stuart, D.D., Chancellor of the University.)

The Chancellor said: I deeply regret, on the occasion of the celebration of the majority of our University, the absence of Dr. Hislop, owing to illness, of Dr. Macgregor, of Wellington, our first Professor of Mental and Moral Philosophy and Political Economy, owing to prior engagements, and of a representation of the Professorial Board of Canterbury College, owing to the classes being in session. I am glad to see in the audience John McLean, Esq., of Red Castle, who was one of the speakers at the opening of the University, and who did yeoman service as a member of the Provincial Council of Otago in obtaining additional endowments which enabled the Council, not only to increase the teaching staff, but also to found the Medical School.

The Otago Settlement, an offshoot of the Free Church of Scotland, in its beginning, was founded at the urgent request of the New Zealand Company by a body of fifty elders, known as the Lay Association for colonizing Otago—all of them leaders in a community which, in the course of the first five years of its stirring history, erected manses, churches, and schools for over five hundred congregations, two fully equipped Normal schools, and two theological colleges. But this was not all. The Disruption wave having brought to its door all the missionaries of the Church of Scotland in India, Constantinople, and other centres, they provided them with residences, schools, college premises, and maintenance. The Lay Association held with their church that in undertaking to found a colony of friends and brethren in the Britain of the South it must place within their reach not only church and school, but also, as the settlement extended and the population increased, the means of the higher education—secondary schools and the University. And beyond doubt and question had it continued on the lines on which it was founded, these and the kindred institutions, which are the corn and wine of Christian civilisation and well-being, would have been provided. The Association, by placing Captain Cargill, Rev. Dr. Burns, and Mr. John McGlashan at the head of the enterprise, showed that their ideal of colonisation was of the highest order. As you know, the practical bankruptcy of the noble New Zealand Company crippled the settlement before it had time to enter upon its heritage; but the imperishable seeds of education and religion had, however, rooted themselves in the minds of the settlers, and continued to grow amid the struggles incident to all such beginnings. There was the utmost unanimity among them as to the importance and necessity of secondary and higher education.

In the fourteenth year of the settlement, the Presbytery of Otago (1861) resolved that the end contemplated by the trust relative to education would be best met by the establishment of a collegiate institution. Next year a committee of the court brought up a report recommending the immediate erection of a college and setting forth the curriculum, the estimated cost, and the means available. The committee reporting was instructed to communicate with the Provincial Government on the education proposed to be given in the High School about to be established in Dunedin, and to report to the Presbytery for its guidance in proceeding with the collegiate institution. In June 1862 the Presbytery resolved to hold a special meeting with office-bearers and others for conference on the institution of a college. In September the same year the said meeting was held, but no recommendation was made to proceed with the college. In the interval, the Provincial Government established the High School of Otago, with whose excellent record you are all familiar.

In 1867 the Rev. F. C. Simmons, the Rector of the High School, petitioned Parliament to create University scholarships tenable in British or other universities, and exhibitions tenable in the secondary schools of the colony, as a means of encouraging the highest possible standard of education and intellectual culture in the colony. His petition was referred to a select committee, consisting of Mr. Carlton, Hon. Mr. Fitzherbert, Mr. Haughton, Mr. Ormond and Mr. Jollie. After due consideration the committee resolved to ask the views of about 60 gentlemen residing in different parts of the country as to whether the ends desired would be better promoted by university scholarships and exhibitions, to be used as already stated, or by the establishment of a New Zealand University. Written replies, more or less full, were received from 51 of the gentlemen whose opinions and suggestions had been solicited. Thirty-five of them strongly recommended the university scholarships and local exhibitions, and 16 the establishment of a New Zealand University. It may interest you to know that scholarships in Home universities were supported by seven head masters and masters of secondary schools, the Superintendents of Southland and Taranaki, Judges Chapman, Richmond, Johnston, Moore and Gresson, Sir James Hector. Mr. Rolleston, Mr. Gisborne, and Major Richardson; while a colonial university was supported by Sir William Martin, Mr. Macandrew (Superintendent of Otago), Dr. Hislop, Mr. Swainson, three head masters of secondary schools, Dr. Stuart, Dr. Bruce, Rev. W. Colenso, School Inspector Hodgson, Bishop Pompallier, Mr. Tancred, &c. The Select Committee reported that "they concurred with Mr. Simmons and the majority of the gentlemen who favoured them with their views in the opinion that university scholarships, tenable in British universities, if properly established and cared for, would exercise a very perceptible and beneficial influence direct and indirect upon the whole course and character of education in New Zealand, and added that they could not recommend any attempt to be made at present for the establishment of a New Zealand University." The report of the Select Committee of the Legislative Council was to the same effect, but added: "With respect to the foundation of a colonial university, they consider that the colony is not yet sufficiently advanced in population and other material particulars to allow of its being undertaken immediately with any prospect of success."

Disappointed with the recommendations of the Select Committees, Mr. Macandrew, who held for years that the time was near, if not fully come, for establishing a modest colonial university, availed himself of the meeting of the Provincial Council to bring the subject before its members. In his official address, February 28th, 1868. he said: "It appears to me the time has come when measures towards obtaining such an institution should be commenced, and there is no part of the colony in a better position to make the commencement than ourselves. Gentlemen, I am sure it is not necessary for me to dilate upon the advantages, both material and moral, which such an institution may be expected to confer, and I confess that to me it will be a source of no little satisfaction if during my tenure of office the Legislature of Otago should distinguish itself in this direction. A Select Committee will be proposed to consider the whole subject." These words acted electrically. On the motion of Mr. George Turnbull, seconded by Mr. Hay, the following members of the Council were appointed a select committee on the establishment of a university in Dunedin, and to report, viz.:—The Speaker (Mr. Reynolds), Messrs. Vogel, Robertson, McIndoe, Driver, Sibbald, and the mover.

In due course the committee reported strongly in favour of establishing a university. Their recommendation was supported by the written views of several gentlemen interested in education, as Messrs. John Gillies, senr., E. B. Cargill, John Hay, Revs. Dr. Stuart, R. Connebee, and others, and by letters from Rev. Dr. Burns and Archdeacon Edwards expressing hearty concurrence. The adoption of the report was speedily followed by the establishment of the University fairly endowed, and the appointment of a governing body not subject to political control. The following gentlemen formed the Council of the institution:—Rev. Thos. Burns, D.D., Rev. D. M. Stuart, Rev. R. L. Stanford, B.A., Drs. Burns and Hulme, Mr. A. C. Strode, R.M., Mr. Jno. Hyde Harris, Mr. W. H. Reynolds, M.H.R., Mr. E. B. Cargill, Mr. Graham, and Major Richardson, M.L.A., and Mr. Jas. Fulton.

The Council at its first meeting elected Rev. Thos. Burns, D.D., Chancellor, and Major Richardson, Vice-Chancellor; Mr. A. C. Strode, Treasurer, and Dr. Hislop, Hon. Registrar. The Council unanimously resolved to proceed with arrangements for the appointment of three professors, in conformity with the instructions of the Government—one to have charge of Latin, Greek and English; one of Mathematics and Natural Philosophy; and the third (endowed by the Synod of Otago and Southland) of Mental and Moral Philosophy and Political Economy—and to add other chairs according to the requirements of the Institution.

I need not tell this audience of friends, old and new, that the providence of the Otago Legislature never failed the University. Its powerful hand was never withheld when assistance was required for increasing its efficiency. When it was deemed wise to add to the teaching staff and lay the foundation of a Medical School, the Provincial Council added one hundred thousand acres of pastoral country to the endowment.

On the news reaching the ears of the Synod of Otago and Southland, that Mr. Macandrew was to ask the Provincial Council to found a college, it promptly supported him by passing an *overture* in favour of a University, and appointing an influential committee to confer with him on the subject. In January, 1869, the committee presented a report to the Synod, covering correspondence on the subject with the Superintendent. The report was adopted and the Synod resolved to erect and endow a chair of Mental and Moral Philosophy and Political Economy, and passed an *interim* Act (confirmed in due course) authorising the payment of an adequate salary to its occupant, and directing steps to be taken for his appointment. When the committee entrusted with this business reported the appointment of Professor Macgregor the Synod recorded its satisfaction thereat. The Synod has, in the interval, erected the chairs of Physics and English and endowed them. It also showed its appreciation of a teaching university by resolving to make a grant to the chairs it might found of the books and apparatus necessary for their efficiency, by requiring all candidates for its ministry to take the undergraduate course, and by recommending the establishment of scholarships for the encouragement of persons of ability to avail themselves of its advantages.

The handsome building now known as the Colonial Bank buildings, originally designed for a post-office, had been secured to the University, chiefly through Mr. Macandrew. The Council adapted several of the rooms for lecture rooms. The opening of the University was fixed to take place in July, 1871, and the necessary preparations were ready against that day. Great regret was felt that Mr. Macandrew, the Superintendent of Otago, was unable to be present, but his letter of apology showed that his heart and soul were in the enterprise. The inauguration took place in the great hall, when Major Richardson, who on the death of Dr. Burns was appointed Chancellor, presided and delivered an address worthy of the occasion.

In the evening a social meeting was held in the hall, when a band of Dunedin ladies dispensed with a free hand refreshments to crowds of their towns-folks and many country cousins who joined in the celebration. The speakers were the Chancellor, Judge Chapman, Revs. Wm. Will and Jas. Copland, M.D., Professor Sale, and the Hon. John McLean, who delivered appropriate speeches.

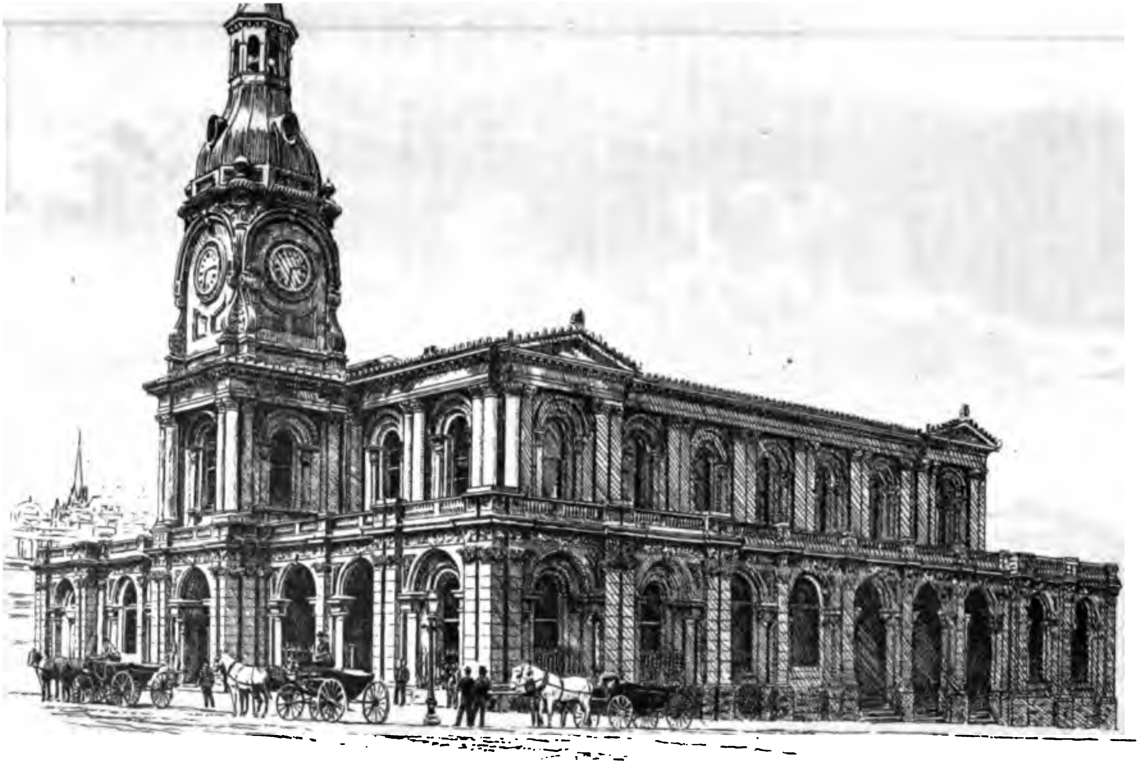
The teaching staff at the outset consisted of three professors, but for years it has numbered nine professors and seventeen lecturers. It has now, in addition to the Arts Faculty, a School of Medicine, a School of Law, and a School of Mines, accommodated in premises which are substantial and well adapted for their operations. While I do not say that our University has done educationally all it might have done, at the same time I unhesitatingly affirm that its work has fully justified its establishment and continued maintenance. It is to its friends a great pleasure to see that its *alumni* are already in all the professions and industries of the colony. Above all praise are its services to our schools, primary and secondary, in whose halls meet and mingle our youth, and obtain an education fitting them for their respective careers and the enjoyments which culture and disciplined minds shed on work and home and life. Our men of mark and influence have stood nobly by our university, but all will give the first place to Mr. Macandrew, while in loyalty and service Sir John Richardson comes next. Dr. Hislop, as honorary registrar, for two years was the right hand of the Council in the arrangements and correspondence connected with the election of professors and the opening of the University. For one, I bless God I was permitted to contribute in the smallest measure to its establishment and development. The time I gave to earnest discussions in its service with Mr. Macandrew, Sir John Richardson, Rev. Dr. Burns, Messrs. John Hyde Harris, Fulton, Bathgate, Strode, Cutten, Drs. Hulme and Burns, Judge Chapman and Registrars Livingston and Mansford, who have passed over to the majority, I regard as among the pleasantest of a somewhat busy life.

Friends, join me in the prayer that the University of Otago, through the overruling Providence of Heaven and the loyalty of its staff and students, may flourish more and more, as the years roll on and contribute to the advancement of science and sound learning, the promotion of the material and moral interests of the colony and the establishment of our people in the righteousness which exalteth a nation; and thus help forward the noble ends contemplated by its founders and rulers in giving the settlement primary and secondary schools and for their crown the university, under the abiding conviction that they were necessary to the people's well-being and well-doing. Let us hope that our successors—Council, staff, students and settlers—will hold them in grateful remembrance by maintaining the institutions they founded in the highest efficiency.

THE GROWTH AND WORK OF THE OTAGO UNIVERSITY.

(By John Shand, M.A., LL.D., Professor of Natural Philosophy.)

Dr. Shand said: Mr. Chancellor, ladies and gentlemen,—Dr. Stuart has told you the story of the founding of the Otago University, and it now becomes my duty to give you, in as few words as I am able, a sketch of the growth and work of the infant institution during the 21 years of its existence. We hear of Universities in other quarters of the world—the creations of public or private munificence—which from the outset are provided with a full staff of professors and lecturers, are possessed of well-appointed lecture-rooms and laboratories, are furnished with extensive libraries and costly instruments, and are endowed with princely revenues. Our young institution began its career under far less propitious circumstances. It was housed, indeed, in a handsome building, that now known as the Colonial Bank buildings in Princes street; but its equipments were meagre, its revenues slender, and its staff perhaps the smallest that ever undertook the charge of university education. It was opened in July, 1871, with a staff of three professors—viz., Professor Sale in the chair of Classics and English Language and Literature, Professor Shand in the chair of Mathematics and Natural Philosophy, and Professor Macgregor in the chair of Mental and Moral Science. The idea of the founders seems clearly to have been that the university should consist of a central department of general education—the faculty of arts—and that around this central faculty there should grow up a group of schools for professional and technical education, as the needs of the colony demanded, and as the resources of the institution warranted. No time was lost in starting the young University in the lines of development thus marked out for it. In the very year of its opening a grant of £300 was made by the Provincial Government to aid the University Council in establishing a chair of Chemistry and Mineralogy, and his Honor the Superintendent, Mr. James Macandrew, in announcing the grant, pointed out with characteristic foresight that this might be made the first step towards the establishment in the University of a School of Mines. Professor Black was selected for this chair, and joined the staff at the beginning



THE COLONIAL BANK BUILDINGS.

f 1872. Similarly, when the University received from the Provincial egislature, in 1872, its second landed endowment, the suggestion ras made that this increase of its resources would place the University n a position to institute a Medical School. The University Council rere in full agreement with the views of the founders, and prepared t once to carry out their policy. Accordingly, in 1873, a School of aw was opened, with our distinguished townsman, Sir Robert Stout, s the first law lecturer. In the following year Captain Hutton was ppointed as lecturer in Geology and Zoology in the University, and lso as curator of the museum, which was then lodged in the Jniversity Building, although the collections belonged to the Pro- incial Government. This appointment was intended to facilitate qually the establishment of a School of Medicine and a School of Mines.

As early as December, 1873, the Council had decided to take ractical steps for the establishment of a School of Medicine. In due ourse Dr. Coughtrey was selected as the Professor of Anatomy and 'hysiology in the proposed School. Professor Coughtrey joined the eaching staff in 1875, and shortly afterwards lecturers were appointed n Clinical Medicine and Surgery. The resources of the University ot being equal to the establishment of a complete Medical School, he Council decided to make provision for two years of the medical urriculum being taken at Dunedin. The students thereafter were o proceed to the Home country and complete their course at the 'niversity of Edinburgh or some other Medical School by which the tago School was recognised. By taking this step the Council elieved that they would be conferring a boon upon youths here who esired to follow the medical profession, since the expense of their edical education would be largely reduced, and the time when they ere obliged to leave the colony would be postponed till they reached a ore mature age. Negotiations were entered into with several of the ritish universities and licensing bodies for the recognition of the hool, but their progress proved to be distressingly tedious. The ature of the difficulties encountered may be indicated in a sentence. is impossible to get a medical school recognised until it exists and in actual operation; and it is an exceedingly hard task to bring the hool into operation until it is recognised. Within the colony, too, bstacles of all sorts had to be surmounted. Legal difficulties in the ay of getting subjects for dissection had to be removed; satisfactory rangements with the Dunedin Hospital had to be made, and the edical profession had to be conciliated. In the meantime Professor oughtrey resigned his chair, and was succeeded in 1877 by Dr. Scott, e present professor of Anatomy and dean of the Faculty of Medicine. ventually all difficulties were overcome, and in 1878 the Medical chool got fairly under way.

During the same period the arts faculty also received attention. n 1875 it was strengthened by the appointment of lecturers in French and German, the Professorial Board was created and entrusted with the conduct of the educational arrangements of the University, and the library was augmented by several thousand volumes, which were purchased with the proceeds of a very liberal public subscription. In 1877 Captain Hutton was promoted to the professorship of Natural Science in the University, retaining, however, the curatorship of the museum. Under his active management the zoological and mineral collections had swelled beyond the limits of the space assigned to them in the University building. A spacious and well-designed museum building was, therefore, erected at the expense of the Provincial Government, into which the collections were transferred in the early part of 1877. Later on in the same year, the Provincial Government having now been abolished, the Colonial Legislature endowed the museum with a reserve of land adequate for its support and handed it over to the University Council. Since then the museum has continued to be under the charge of the professor of Natural Science, and the collections have been greatly added to, and rendered most valuable for teaching purposes by the present curator, Professor Parker, who succeeded Professor Hutton in the chair of Natural Science in 1880.

The establishment of a School of Mines was contemplated, as has been indicated, at an early period, but it was not until 1877, when the Colonial Government offered to give an annual grant in aid of the School, that the University Council resolved to take decided action. In the following year Professor Ulrich was appointed as director of the School of Mines, and professor of Mining and Mineralogy in the University. Courses of study were drawn up for the different divisions of the School, and it was opened in 1879.

In the same year the University was removed from Princes street to the more commodious buildings which it at present occupies. The cost of erecting these buildings was a severe strain on its resources, and rendered further expansion for a time impossible. In 1883, however, when the financial pressure was a little relieved, the Council determined to provide a full medical curriculum. Accordingly four additional lecturers were appointed to the Medical School, who joined the staff in the following year. Several other lecturers have since been added from time to time, so that the lectures now provided may be regarded as reasonably adequate to cover the whole field of medical study. Students have thus been enabled to obtain a full medical training without leaving the colony; but if they desire a Home qualification, they have still the option of proceeding to any of the British Medical Schools, after taking the first portion of their course in New Zealand.

The financial straitness that has been referred to greatly retarded the development of the School of Mines. Although it was opened in 1879, it was not until eight years later that the Council were able to complete its staff by the appointment of three lecturers on subjects essential to a full mining course. In 1891 the school was accommodated in a separate building, specially designed for its use ; and its staff was further strengthened by the appointment of Mr. D. Wilkinson, of the Royal School of Mines, London, as the lecturer on Metallurgy and Assaying. It is now fully equipped with lecturers, laboratories, and appliances, and offers a complete and thorough course of technical instruction. In 1891, also, the School of Law, which hitherto had contained but one lecturer, was strengthened by the appointment of two more lecturers. The school cannot yet be regarded as complete, but the lectures cover much more fully than before the course prescribed to candidates for the LL.B. degree.

While the Council were thus striving to establish and complete their professional and technical schools, the central faculty was also strengthened from time to time by the aid of funds derived from a source external to the revenues of the University. It is well known that certain funds held by the Presbyterian Church of Otago were long ago set apart by an act of the Colonial Legislature, initiated and promoted by the Synod, to the support of University education. From this source was endowed one of the three professorships originally instituted, that of Mental and Moral Philosophy, held first by Dr. Macgregor, and since his resignation in 1886 by the Rev. Dr. Salmond. Under the prudent management of the Church Trustees these funds increased in value, so that they became equal to the support of two additional professorships. Accordingly in 1881 the chair of English Language and Literature was dissevered from that of Classics and endowed from this source. It was first held by Professor Mainwaring Brown, and, after his lamented death in 1888, Professor Gilray was elected to the vacant chair, and joined the staff in 1890. Again in 1886 the chair of Natural Philosophy was dissevered from that of Mathematics, and endowed from these funds, when Professor Gibbons was selected to fill the vacant Mathematical chair. Thus the staff in the Faculty of Arts has increased from three professors in 1871 to seven professors and two lecturers in 1893, while the whole teaching staff of the University has increased from three in 1871 to 26 professors and lecturers in 1893, without including the honorary medical staff of the Dunedin Hospital, who are *ex officio* the lecturers of the University in clinical medicine and surgery. The advance has been more rapid, perhaps, than financial prudence would commend; but it is hard to resist being carried onward by the tide of progress, and it is pardonable to be even over zealous in striving to perfect institutions which are well fitted to promote the welfare of the colony.

Let us turn now to the students. In the opening session, 1871, there was an attendance of 81 students. In that year there was no matriculation examination. Few of the students who entered had the intention of following the regular course, and as most of them contented themselves with a single class, the whole number of classes taken was only 121. In 1872 only seven candidates passed the matriculation examination, and the attendance fell to 70. In 1878 the attendance was again 70, but in the following year it dropped to 50—its lowest point. This falling-off was attributable to the entrance examination, and to the fact that a proper standard of work was maintained within the institution. It really signified nothing more than the weeding out and exclusion of an incompetent class of students. Nevertheless the dwindling in the attendance was a patent fact, and it produced the impression on not a few that the experiment of setting up a University in the colony was doomed to be a hopeless failure.

Those early years were a period of anxiety and trial to the professorial staff. The discouragement of the friends of the institution, the gibes of its enemies, and the half-contemptuous indifference of the public had to be borne in silence. The trouble was aggravated by the keen and prolonged struggle which took place between this University and the University of New Zealand, which had been called into existence by the Colonial Legislature a year later than our own. The struggle was not merely for existence. It involved even graver consequences than the extinction of the one or the other institution; for on its issue depended the type and character of superior instruction in the colony for our time, and probably for succeeding generations. The colony, in truth, was not at that time quite ripe for university institutions; and the New Zealand University, with the object of securing popular support, reduced its standard for degrees to the level of the instruction given in the higher schools, a large number of which it affiliated. This University, on the other hand, unmoved by the clamour for immediate results, determined at all risks to maintain a high standard, and to endeavour to raise the level of general education by the stimulus of its direct action and indirect influence. The difference was the all-important one between the policy of levelling down and the policy of levelling up. While the contest was raging, and its issue was still doubtful, our neighbours in the flourishing Province of Canterbury, who had been watching our movements, determined in 1873 to found a University College on the same lines and with the same aims as our own. When the Canterbury College came into existence it found itself in an embarrassing position. It was bound to the New Zealand University because it did not possess an independent power of granting degrees; but its authorities agreed with our policy, and dreaded the policy of the New Zealand University as calculated to drag down their new college to the level of an ordinary high school. Through its intervention a compromise was ultimately arrived at. The functions of the New Zealand University were restricted to conducting examinations and conferring degrees, while it accepted for its examinations the high standard which had been contended for by the University of Otago. Regulations embodying the new standard which had been drawn up by the professors of the Otago University and the Canterbury College were adopted by the

Senate of the New Zealand University in 1875; and I am inclined to think that the Senate was not sorry to have an opportunity of retreating honourably from the position which it had taken up. At any rate, it firmly maintained the high standard of its examinations; and the schools which had become affiliated to it, one after the other withdrew or were disaffiliated. The Otago University on its part agreed to become, with the Canterbury College, affiliated to the New Zealand University, to make use of its examinations, and to accept its degrees. Some of our most sincere friends have regretted this step, which they have regarded as a sacrifice of the autonomy of the Otago University. On the other hand, the students and the teaching staff, who have the largest interest in the change and the best opportunity of observing its effects, maintain that what we have gained is well worth what we have lost; for the alliance with the New Zealand University has given us a far more satisfactory system of examination than otherwise would have been possible. It is well known that for the last thirteen years the examiners of the New Zealand University in Arts, Science, and Law have been appointed in England, being selected, for the most part, from the eminent men who act as examiners at the great English universities. This circumstance has given a value to our degrees which they could not have attained if the examinations had been conducted by ourselves; and there is the further inestimable advantage that through the examinations the professors of the New Zealand colleges are kept in touch with the progress made in England in their several departments.

After peace was concluded with the New Zealand University, the attendance began to improve; but I will only give you the numbers at intervals of five years. In 1877, the whole attendance was 76, the number of classes taken was 114, and the number of matriculated students was 19, or 25 per cent. of the whole. In 1882, the attendance was 122, the number of classes taken was 223, and the matriculated students were 43, or 35 per cent. of the whole. In 1887, the attendance was 168, the classes taken were 455, and the matriculated students were 99, or 59 per cent. In 1892, the attendance was 212, the classes taken were 568, and the matriculated students were 173, or 81 per cent. The striking rise in the proportion of matriculated students, and in the number of classes taken, relatively to the whole attendance, clearly indicates the progress of general education within this provincial district. And here I may be permitted to point out that the indirect influence of a University College is slowly raising the level of general education, and in gradually diffusing around it a higher condition of culture may be of more value to the community than the results which it directly produces. I am far from claiming for the Otago University the whole credit for our educational progress. I most willingly accord the due share of praise to the excellent scholarship system of the New Zealand University, to the admirable plan of classification of teachers adopted by the central educational department, and to the liberal regulations of the Otago Education Board, although I feel constrained regretfully to add that the last-named body has lately shown a tendency to retrograde from their former enlightened policy, and to forget that raising the educational status of the teachers is the first and most essential step in the elevation of general education.

I will now turn to the direct results produced by the institution, and I beg you to bear in mind that these have been appraised by eminent and experienced external examiners. The first year in which it was possible to gain a degree was 1878. Beginning with this year, therefore, I will divide the time up to the present year into four quinquennial periods. In the first period ending in 1887, only five degrees were obtained and one student took honours; in the period ending 1882, 19 degrees were obtained and three students took honours; in the period ending 1887, 66 degrees were obtained, 12 students taking honours. In the last period ending in 1892, and including, therefore, the last examinations, 143 degrees were obtained and 44 students took honours. Of the whole number of 223 degrees that have been obtained, 189 are in Arts and Science, nine in Law, and 25 in Medicine. I venture to suggest that these figures indicate a satisfactory rate of progress, and the progress is due in part to the expansion of the institution, in part to the marked elevation of school education that has been referred to, and in part to the improved tone existing among the students. When a university is young its students are destitute of the traditions of student life, they catch with difficulty the student spirit, they lack confidence in themselves and in their instructors, and they are wanting in zeal for the honour of an institution of which they have not yet learned to be proud. But though we are devoid of the associations connected with the old universities, and are only slowly acquiring their habitudes and spirit, the forces which have been working for progress are still in action, and we may look confidently for continued improvement.

I have mentioned that the whole number of medical degrees conferred up to the present time is 25, 21 candidates having obtained the degree of M.B., and four of these having subsequently proceeded to the degree of M.D. This is not an unsatisfactory record for the short period that has elapsed since a full medical curriculum was afforded; but it by no means represents the whole work done by the School. A large proportion of the students—about 70 per cent. indeed—still proceed to the Home country to complete their medical studies, after giving an attendance of one, or two, or three years at the Otago Medical School. Since the opening of the School 83 students in all have adopted this course, 18 of them before it was announced in 1883 that the medical curriculum would be completed and degrees in medicine conferred by the New Zealand University, and 65 since that date; and it is well known to many of you that a large proportion of these students have done credit at Edinburgh and elsewhere to their New Zealand training.

The attendance at the School of Mines languished greatly from its opening up to the time when the Council was able to complete its staff. The fact excited at the time surprise and detraction; but it would have been more surprising if the School had attracted students while unable to give a diploma. A partial School of Medicine may, as we have proved, be successfully instituted, but a School of Mines is indivisible—until it is complete it is, for practical purposes non-existent. Since the School was completed the results have been wholly satisfactory. There has been an average of 20 students in attendance, and 14 students have finished their courses and obtained diplomas, most of them in several divisions of the School. It is gratifying to observe that, on the completion of their training, the students are rapidly absorbed by the mining industries of our own and the Australian colonies.

It deserves to be mentioned that all the classes in the University have been open to women from the outset. Since 1872 women have been in regular attendance, and their numbers have increased from year to year. Last session 85 women were enrolled, two in the Faculty of Medicine, and the rest in the Faculty of Arts. Since the commencement, 20 women have obtained the degree of B.A., 10 have obtained the degree of M.A., and nine have taken honours. So far as I am aware, this University was the first in the British dominions to throw open its doors to women as widely as to men.

You will agree that the rulers of our University have shown energy and persistency of purpose in carrying to a successful issue the scheme of the founders. We have been fortunate in the men who have occupied seats in the Council, and still more fortunate in the men who have successively filled the Chancellor's chair. They have done their work, so far as it was in their power to do it, wisely and well; but you will have gathered that the history of the University has been one long struggle with the inadequacy of its pecuniary resources. The plan of the institution was well conceived, but it was too large for the means with which the Council were furnished. No one would wish that less had been attempted. No one would desire to abolish the School of Mines, or to clip the wings of the School of Medicine, which are both doing excellent service to the community. But one does regret that in order to complete these Schools it has been necessary to resort to a pinching economy, which grinds down every department, and almost threatens to strangle the life out of the institution. As this has been made an occasion for reviewing our position, I will make a frank statement of our needs, not for future expansion, but for the continued efficiency of the work which we have already undertaken to do. With regard to buildings, we want urgently two additional lecture rooms, several smaller rooms, and a large examination hall. Then there is a pressing need of funds for the maintenance of the library and laboratories, which ought to be kept supplied with the latest books and instruments; the remuneration paid to many of the lecturers is confessedly far below the value of their services; and demonstrators are sorely needed in the several scientific departments. It would be desirable, also, to establish, as has been done at Canterbury College, a few annual exhibitions with the purpose of encouraging students to become candidates for honours. All these defects could be remedied, and the University placed in an easy financial position, by an additional income of £2000. There is no source from which this can be supplied except that of private beneficence. It is to be hoped that this source will not always in our case remain unfruitful; for surely there can be no purer and nobler ambition than that of living in history as the patron and benefactor of an institution which is destined to hold up the lamp of truth and knowledge to our children for many generations.

RECENT CHANGES IN THE OLD ENGLISH UNIVERSITIES.

(By George Samuel Sale, M.A., Professor of Classics.)

Professor Sale said that in speaking on the subject of university education in England, his remarks would have to refer mainly to that ancient university with which he had been connected—the University of Cambridge,—although a good deal of what he had to say would apply with almost equal force to Oxford. He would like his hearers to bear in mind that in his opinion the most important part of the work which the English universities did was done by means of the colleges. The ample funds which private beneficence had placed under the control of the colleges had enabled them to find out, to reward, to encourage, and assist in every way men of ability wherever they were to be found in the British Empire. And right nobly had these institutions performed the functions which devolved upon them. He knew of no institution, nor could he conceive of any, which deserved better of the English commonwealth than the royal and ancient College in which he himself had passed 10 years—Trinity College, Cambridge.

The changes which had taken place in Oxford and Cambridge during the last 30 or 40 years had been of several kinds. Chiefly, however, they might be divided into two classes. First, by way of expansion—not only by opening the doors of these Universities and admitting persons excluded from them in the old days, but also by enlarging the studies that were pursued there, and by recognising subjects as worthy of university study which formerly were unrecognised. The second change was in the direction of concentration and specialisation of study. These changes were not really inconsistent with each other, although at first sight they might appear to be inconsistent. Whether they were likely to be ultimately beneficial the University, chiefly through Mr. Macandrew. The Council adapted several of the rooms for lecture rooms. The opening of the University was fixed to take place in July, 1871, and the necessary preparations were ready against that day. Great regret was felt that Mr. Macandrew, the Superintendent of Otago, was unable to be present, but his letter of apology showed that his heart and soul were in the enterprise. The inauguration took place in the great hall, when Major Richardson, who on the death of Dr. Burns was appointed Chancellor, presided and delivered an address worthy of the occasion.

In the evening a social meeting was held in the hall, when a band of Dunedin ladies dispensed with a free hand refreshments to crowds of their towns-folks and many country cousins who joined in the celebration. The speakers were the Chancellor, Judge Chapman, Revs. Wm. Will and Jas. Copland, M.D., Professor Sale, and the Hon. John McLean, who delivered appropriate speeches.

The teaching staff at the outset consisted of three professors, but for years it has numbered nine professors and seventeen lecturers. It has now, in addition to the Arts Faculty, a School of Medicine, a School of Law, and a School of Mines, accommodated in premises which are substantial and well adapted for their operations. While I do not say that our University has done educationally all it might have done, at the same time I unhesitatingly affirm that its work has fully justified its establishment and continued maintenance. It is to its friends a great pleasure to see that its *alumni* are already in all the professions and industries of the colony. Above all praise are its services to our schools, primary and secondary, in whose halls meet and mingle our youth, and obtain an education fitting them for their respective careers and the enjoyments which culture and disciplined minds shed on work and home and life. Our men of mark and influence have stood nobly by our university, but all will give the first place to Mr. Macandrew, while in loyalty and service Sir John Richardson comes next. Dr. Hislop, as honorary registrar, for two years was the right hand of the Council in the arrangements and correspondence connected with the election of professors and the opening of the University. For one, I bless God I was permitted to contribute in the smallest measure to its establishment and development. The time I gave to earnest discussions in its service with Mr. Macandrew, Sir John Richardson, Rev. Dr. Burns, Messrs. John Hyde Harris, Fulton, Bathgate, Strode, Cutten, Drs. Hulme and Burns, Judge Chapman and Registrars Livingston and Mansford, who have passed over to the majority, I regard as among the pleasantest of a somewhat busy life.

Friends, join me in the prayer that the University of Otago, through the overruling Providence of Heaven and the loyalty of its staff and students, may flourish more and more, as the years roll on and contribute to the advancement of science and sound learning, the promotion of the material and moral interests of the colony and the

was a question which could not be answered at present. It was very common for persons who were not acquainted with the ancient universities to speak lightly and confidently about the probable result of changes which agreed with their own personal predilections. This was, however, an exceedingly difficult question and could only be solved by experience, and the experience must last for many years before anyone could say whether any change was really for the ultimate benefit either of the University or of the people for whose advantage the University existed.

The changes by way of expansion were made in several ways. First, by admitting persons formerly disabled from entering the Universities, or, at least, from obtaining degrees there. At the time he entered the University, in 1850, a religious test was imposed upon all persons before taking their degrees—they had to declare themselves members of the Church of England. At the same time there was no test imposed at matriculation. Persons could and did study and obtain honours at Cambridge although they might be of any religious persuasion. When he went to Cambridge in 1850, he found that one of the most prominent members of that University was Mr. Arthur Cohen, of Magdalen College, a Jewish gentleman, a man of mark, who in 1853 took the high place of fifth among the wranglers. Mr Cohen had not to submit to any test at all; and though he could not speak from memory of other cases, no doubt there must have been other cases of men, not only not belonging to the Church of England, but not even professing the Christian religion, who were admitted to study and encouraged to study in the University of Cambridge. It was not so at Oxford, because at Oxford at that date a religious test was imposed at matriculation. However, in the year 1854 the tests were removed at Oxford, and in 1857 the tests were also removed at Cambridge, and Mr. Cohen himself took his B.A. degree in the year 1858, and his M.A. degree in due course afterwards. The only disability remaining after that time was that M.A.s were still required to take the oath before being admitted to act as members of the senate—that is, in controlling the affairs of the University.

In the meantime, fellowships—and, as he had mentioned, it was this system of granting fellowships that had given Cambridge its great prestige, and was the means by which it had done most good to the commonwealth—the fellowships of Trinity and probably of all other colleges were open to all persons professing the Christian religion. In the old statutes of Trinity College in force when he obtained his fellowship the oath taken upon admission contained the following words :—"I declare that I will embrace the true religion of Christ with all my heart, that I will place the authority of Scripture before the judgment of men, that I will seek as the rule of my life and the sum of my faith the word of God, that those things that are not proved from the word of God I will treat as human things, that among men I will make the authority of the Queen supreme and

in reality was worth a great deal more than the privilege of placing B.A. after her name, for all the purposes for which university distinction was desired.

With regard to the admission of women to degrees, as had already been pointed out by Professor Shand, the way was led by the Otago University, and, he believed, mainly through the influence of its second Chancellor, the late Sir John Richardson. The University of New Zealand followed this example, and the first woman who gained a degree in the British Empire, he believed, was Miss Edger, who was admitted to the degree of B.A. in 1877. The London University decided to admit women to its degrees in 1878, and its first matriculation examination open to women in London was held in 1879. The Victoria University and the Royal University of Ireland decided to admit women to degrees in 1880; and in a draft charter of the Welsh University, which is to include colleges at Aberystwith, Bangor and Cardiff, the following clause was included:—"Women as well as men shall be eligible for degrees in the University herein constituted, and for every office and for membership of every body or authority herein constituted, and wherever throughout this act (or charter) the masculine pronoun is used of a student, graduate, or officer of the said University, or of a member of any body or authority in it, it is to be construed as including the feminine also." That, he thought it would be admitted, was going far enough.

Another way in which the Universities had enlarged their borders was by means of what were called Extension Lectures. It would take too long to trace the history of this movement, but he might say, briefly, that the Extension Lectures had grown naturally out of the University Local Examinations, and that the first practical step in giving such lectures was taken in 1867 by Mr. James Stuart, of Trinity College, Cambridge, afterwards Professor of Mechanism and Applied Mechanics. In that year Mr. Stuart accepted an invitation to lecture to an association of ladies in the North of England. Other invitations followed from different associations in other places, and in 1873 the scheme was formally adopted by the University. In 1878 a similar scheme was adopted by Oxford, and since that time the Universities had continued to supply lecturers wherever any town was able to furnish the moderate sum required to defray the necessary expenses. Opinions might differ as to the value of these lectures, but there could be no doubt as to the importance of one result which had flowed from them, namely, the establishment of colleges, mainly of a scientific character, at Newcastle, Leeds, Bristol, Sheffield, Birmingham, Liverpool and Nottingham, besides the three Welsh Colleges of Aberystwith, Cardiff and Bangor. It was probable that the foundation of these Colleges had been caused, it was certain that it had been hastened, by the success which had attended the University Extension Lectures, and the proof which they had afforded that such Colleges were required.

Even more important than the extension of the borders of the Universities, was the change which had taken place in the scope of University work. Until the middle of the present century the only tripos examinations were in Mathematics and Classics. But in the year 1851 two new triposes were instituted: one in Moral Sciences, including, (besides what is usually understood by that term), History and Political Economy; the other in Natural Sciences, including Chemistry, Physics, Mineralogy, Geology, Botany, Zoology, Comparative Anatomy, Human Anatomy and Physiology.

In 1858 a Law Tripos was instituted, and he might remark that in the Honours List for that year occurred the name of Joshua Strange Williams as first-class-man and Chancellor's Legal Medallist. Since that time triposes had been instituted in History, Theology, Semitic Languages, Indian Languages, Mediæval and Modern Languages, and finally, in 1892, in Engineering, or, as it was called, Mechanical Science. It would thus be seen that the University of Cambridge had fully realised her duties, and had, in accordance with her ancient traditions, taken a leading part in making University Education the great means of advancing Modern Science. In this connection it would be enough to mention the names of Clerk Maxwell, Lord Rayleigh and Thomson in Physics, of Balfour in Animal Morphology, of Michael Foster in Physiology, and of Sir George Humphry in Surgery.

But it must not be supposed that the great width of range now embraced in the work of the University was allowed to distract or dissipate the energies of the students. On the contrary, the one striking feature which had always characterized Cambridge University work was thoroughness and concentration. It must be remembered that all these new subjects to which he had referred were Honours subjects, and one of the principal objects of the University was to encourage every year a larger number of students to obtain their degrees by winning honours in one of the Honour Triposes. Every student, as soon as he had passed the Previous Examination, or "Little-go," as it was usually termed, (and this was generally done in the first year of his University course), had his hands free to throw all his energies into his Honours work. And the consequence of this was that a very high standard indeed was maintained in these Honours Examinations, far beyond what we could ever hope to approach in our Colonial Universities. And if this was true of the more modern subjects, still more was it true of the old established Mathematical and Classical Triposes.

And this led him to speak of another change which, although at first sight it appeared to be a change in the direction of specialization, might involve the danger of an altogether contrary effect. He alluded to the additional examinations which had been recently instituted for candidates for honours in Classics and Mathematics. In the old days, the final examination for mathematical honours was a general examination, involving a very wide knowledge of mathematics, both pure and applied; and the candidates who stood highest in that examination were the high wranglers for the year. But now, these high wranglers were invited to compete in a further examination of a more special kind, held a year later. In this later examination they could select one of several groups of subjects; and in this special group the work expected from the candidates was of a very advanced kind, so that none but the picked men could venture to enter for the examination.

Similarly in Classics; in addition to the old Classical Tripos Examination, by which candidates obtained their First, Second, or Third class in Classical Honours, there had recently been instituted an additional examination, held a year later, in subjects subsidiary to Classical studies. These subjects were Ancient Philosophy, Ancient History, Archæology, and Language. A candidate had to select one of these groups, and was expected to show a very full and minute knowledge of the subject selected. Now, although this was specialisation of work, it involved the danger that honours candidates might come to look upon these subsidiary studies as more valuable than the old-fashioned scholarship for which Cambridge had always been so famous. The difference between Oxford and Cambridge scholarship had always been, and still was, chiefly this: that at Oxford the principal aim of the student was to make himself acquainted with the matter and contents of a certain limited number of authors, especially historians and philosophers; whereas at Cambridge it was the language, the use of Latin and Greek as vehicles of expression, that was the main object of study. The consequence was, that nearly all the great names of men who in Great Britain had distinguished themselves as Greek and Latin scholars would be found to have received their training at Cambridge. Bentley, Porson, Parr, Dobree, Kennedy, Donaldson, Shilleto, Munro, Mayor, Roby, Jebb, Reid—all these, and others scarcely less distinguished, had shown the effects of the old-fashioned Cambridge scholarship. It could hardly be expected that the recent changes would produce men who would do more than these men had done for the renown of their ancient University.

In conclusion, he would say that the main objects of the English Universities had always been, and still were, two-fold, namely—First, to find out, assist and train the best men for the service of the State, in every profession in which intellectual ability is required. Secondly, to enable and encourage the most distinguished men to pursue to the furthest point studies of which the immediate utility is not obvious, and which therefore to the outside world are unimportant. If it had not been for Cambridge, Newton, Cayley, and Maxwell would never have existed.

THE FUTURE OF THE OTAGO UNIVERSITY.

(By Sir Robert Stout.)

No one who was present, as a good many here were, at the opening of this University in 1871, could have imagined that in twenty-one years' time there would be such a splendid record of work done and progress achieved as are presented to us in the very clear and satisfactory account just given by Dr. Shand, one of the three professors first appointed. Not only has the number of professors and lecturers been increased beyond what there was any reason to hope for, but the number of students who have passed through the University course far exceeds what any of us then present looked forward to. But it is with the future rather than with the past of our University I propose to deal in the remarks I am going to make; to consider what the development of our University teaching must be if this institution is to discharge its proper function in the advancement of the people of New Zealand.

As has been well said by a French writer on education, "primary education is bread-and-butter knowledge;" and we must recognise the fact that now-a-days education is becoming more and more necessary to all who expect to earn a living. And this necessity, now generally recognised in the case of primary instruction, must soon be acknowledged in the case of higher education. As knowledge has become more wide-spread, and inventions and discoveries in science have increased, and as these inventions and discoveries have been applied to manufactures, a nation that expects to excel in manufactures must know everything that other competing nations can teach, and this knowledge can only be acquired by developing technical education. I think the account given by Professor Sale of the progress made at the English Universities shows that they are quite alive to this great movement that is passing over the world, and realise the necessity for developing technical science; and I do not see why we should not try to develop our University on the same lines, although we cannot expect to attain to the completeness of the older Universities. We must look forward to our nation becoming a manufacturing nation, and we cannot expect to attain to any eminence as a manufacturing nation unless we make provision for the equipment of our artisans and workers with the highest skill and knowledge obtainable. We have not the means to send them abroad to be trained, and so we must look to our Universities; because, as Professor Shand has pointed out, the University sets the mark for the secondary schools and the primary schools. No doubt our University has done something for technical education, for we have our School of Mines, while Canterbury has its Schools of Engineering and Agriculture. There must necessarily come in New Zealand specialization in University work, and in the future we must look forward to immense development of technical teaching in our Universities, and to the spread of technical science. I think our University must be developed on these lines. It has been contended that our University should be content with granting degrees in Arts; but I am convinced we must recognise that, with the immense number of studies now necessary, we must have specialization, and with specialization in teaching we must have what logically follows—namely, specialization of the degrees by means of which the University puts its stamp upon its students, as a proof of the work they have done. I believe the time must come when the University of Cambridge will have to recognise this, and that she will confer degrees of various kinds, and not leave people to ascertain merely by the Calendar Tripos what work a student has done in Science.

That is one line of development this University must follow—technical science. But what I wish specially to point out in reference to the future of our University is this: that we have not yet by a long way such a large proportion of our people going forward to the higher education in Arts, not to speak of Science, as there is at the Home Universities. The number of those who take degrees at our Universities does not compare favourably with the number of those who graduate at the English and Scottish Universities, after allowing for foreign students attending these Universities. This shows that our people are not availing themselves of the higher education to the same extent as prevails at Home, and if this goes on for any length of time we must as a nation be less perfectly educated; and if as a nation we are less educated, our nation is lowered, and we fail to reach the ideal of a high national life. We must, therefore, look to the influence of our University being extended, and this can only be done by creating an enthusiasm in the community in favour of higher education. At present we have in our midst many colonists who have enjoyed the benefit of University education in Europe, but as our pioneers pass away men of their class become fewer, for the number of immigrants declines.

What, I may ask, is the aim of higher education? We may, no doubt, say that the aim of all our institutions is to form good men and good women—men and women physically strong and morally pure; and if our men and women are not highly developed in intelligence, which means in the higher education, then we are falling short in our duty as a nation—we are failing to promote true national life. It must therefore be the aim of our University to increase largely its roll of students. I do not think we can form any estimate of the future number of our students any more than we could have foreseen twenty-one years ago the number of students who have passed through the University in that period. Our students must increase in number and in a greater ratio to the population if our University is to discharge its proper function in the community. We must train our men and women amongst ourselves for the discharge of the highest duties of citizenship. We must look to New Zealanders being our future teachers, our professors, and our scientific experts. If we fail in this, what are we to be? We shall be mere slaves to the higher nations—mere growers and exporters of wool, frozen mutton and gold! We shall not be walking in the highest paths of national life if we cannot produce amongst ourselves the men that are necessary to the highest development of a nation. For such men we must look to ourselves. And how are they to be got if we do not have a greater development of University education? What I want to impress upon the community is that we have to train our New Zealanders to such a pitch as we have not even dreamed of up to the present time. Our colleges in New Zealand have as yet done nothing as homes of original research, and we must not rest content with anything short of that. Our colleges are now doing in University work what is really only primary education work—we are imparting mere bread-and-butter knowledge; but we must look forward to the time when in our University halls we shall have men working steadily at some special science or at some special problem of philosophy, or some great question of literature, not merely for the degree obtainable for such work, nor for the money to be earned, but for the mere love of the work. And so long as our Universities and colleges fail in this, they fall short of their higher calling. How, then, is this high ideal to be reached? How are we to perfect our University system so that it may go hand in hand with our material advancement? There are many things that might be done towards the perfecting of the system. Our local bodies can assist. How do our local bodies compare in this respect with those at Home? Look at the history of any of the old Universities. Take Edinburgh University for example. Consider what the Edinburgh Town Council has done in the way of aiding and fostering that institution: they thought nothing of paying a duty on much that they consumed in order to aid their University; and you will see from the Scotch papers that the Town Council of Aberdeen, recognising the need for University extension, voted thousands from the town funds in order to foster the University. Surely it is not too much to ask that our local bodies should do something for the University; for our University is of more benefit to Dunedin than any of our manufacturers. And it enobles the State, because it raises, improves and enobles the people. It becomes a centre of intellectual life that is sending forth influences the value and importance of which no one can estimate. Our local bodies then should continually lend a helping hand to our colleges and University, and in so doing they may rest assured they are doing some of the best work of which they are capable. Then, also, our people should take pride in our educational institutions. One would think the people of Otago imagine that they can best render service to our colleges by criticising and belittling them. I do not take this view of the matter. Nobody says these institutions are perfect. It will take centuries to perfect them, or even to make them at all equal to the institutions Professor Sale has referred to. But I do not believe any struggling institution is helped by being continually subjected to adverse criticism. And yet this is a kind of "assistance" that is very lavishly bestowed upon our University as well as upon other institutions. It would seem that the tendency to this is a characteristic of our colonial life. Many people seem to think it smart to find out some little blot and continually publish it abroad. This is not the part of a good citizen, unless he himself bestir to remove the blot. We must have enthusiasm for our institutions; we must do what the majority of people did at the time of the founding of the University. They saw that it would be to the advantage of the colony to send our bright young men to schools and Universities at Home; but they also saw like wise and patriotic men that until we had in our midst institutions at which our young men and young women could obtain the higher education we should not be fulfilling our higher functions. We cannot hope to emulate Cambridge with its enormous endowments, nor Oxford with its noble associations, nor Edinburgh with its centuries of historical renown, nor any of the old Universities; but we can raise and maintain amongst ourselves a high and noble enthusiasm for our future. I hope to see the day when what has happened in America will happen here, and that our wealthy settlers will come to our aid. The other day we heard of Leland Stanford having given £4,000,000 for the foundation of the Leland Stanford Junior University. Consider, too, what John Hopkins did for the establishment of a University at Baltimore; and look at the other rich men who have given numerous endowments in the other States of North America for the benefit of the higher education. And although we are no doubt a small community, and can never have millionaires as they have in America—and perhaps a good thing too—yet we can do this: we can appeal to our settlers to help the University with their countenance and kindly aid, and, if they have means, with money, and so help it forward in the path of progress. It has been said all people may be divided into two classes—the pessimists and the optimists. The pessimists are continually crying out "there are lions in the path!" they are continually saying that evil is coming, and that what is being done can lead only to misery, and distress, and wrong. The other class of people always look at the bright side of things—they always have hope for the future. Well, I believe if you read history aright you will see that no pessimist ever did much good for humanity. How could he? If there is to be no future of joy, he cannot strive to reach it; if the future is to be full of misery, he cannot work for it. It is the people who have faith and hope in the future of the race that can alone help us. And it is this class of people we hope to see taking an interest in our University. When New Zealand can say that, compared with her population, she has more men and women who have passed through its University colleges than any other nation, then New

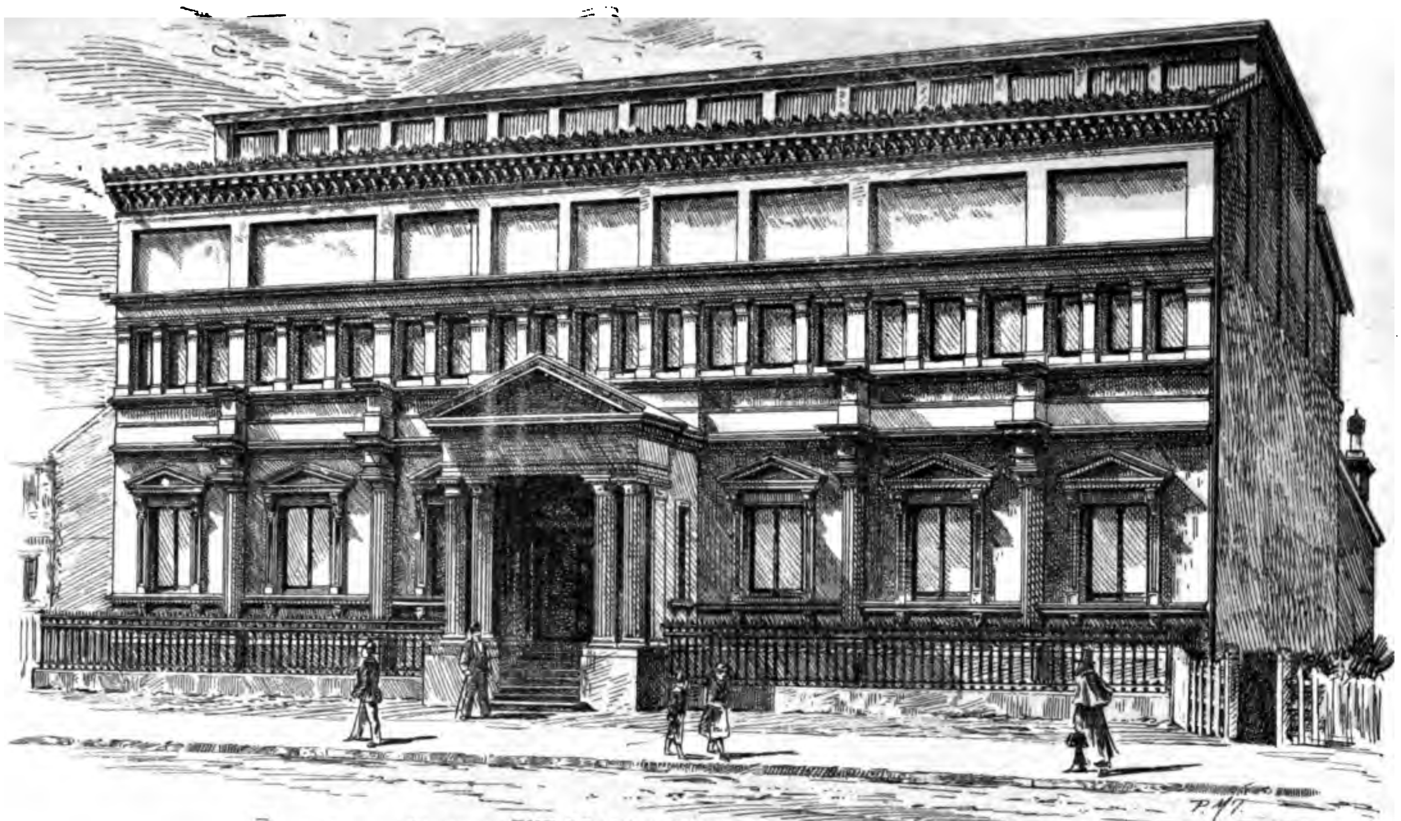
Zealand will have greater glory than if she quadrupled the export of frozen mutton, doubled our export of wool, increased the output of gold, and multiplied our industries and manufactures. Then we should be raised in the scale of nations; for, after all, it is education—intelligence—and intellect that make a man great; and I believe it is only an intelligent educated people that can make a nation great. In looking to our national life, then, we must look to the development of our Universities. Their influence is really the salt of our communities; and if we can leave as a legacy to our children's children a University equipped for the higher development of humanity, then we shall have done something more for them than if we had merely increased, however largely, their power of material production. I trust that, seeing what our first twenty-one years have accomplished, we shall go forward, all of us doing our share as loyally as we can to help University development, so that those who come after us will be able to recount with pride our efforts in the cause of higher education. Let us help the University so that future Chancellors may look back and say that the men of 1893 all did their duty loyally in helping to advance the University, and so advancing the cause of our country and people.

The Otago University Museum.

The nucleus of the Museum was a collection illustrating the geology and natural history of Otago which was formed by Dr. (now Sir James) Hector in the early sixties, and was exhibited in the New Zealand Exhibition of 1865 in the building now used as a hospital. Dr. Hector was at that time Provincial Geologist, and the collection was exhibited as forming the Museum of the Geological Survey of Otago. It appears to have been a very good exhibition collection, and included rocks, minerals and fossils, birds and fishes, timbers and building stones, dried plants, maps, drawings, etc.

At the close of the Exhibition the specimens were stored away for about three years, when some rooms in the old University—now the Colonial Bank—were set apart as a Museum, and £100 a year was voted for expenses, the late University janitor (A. Purdie) acting as caretaker, or curator, or both.

In 1878 a new era began. The Provincial Council voted £500 a year for the maintenance of the Museum, and Captain F. W. Hutton, of the Royal Welsh Fusiliers, who had seen service in the Crimea and the Indian Mutiny, and whose scientific writings had attracted the notice of no less a person than Charles Darwin, was appointed curator, receiving at the same time the appointments of Provincial Geologist and lecturer on Geology at the newly-founded University.



THE OTAGO UNIVERSITY MUSEUM.

The Museum was managed by a committee, consisting of Mr. W. D. Murison (chairman), Mr. L. O. Beal, Professor Black, Dr. Alexander, and Mr. Arthur Beverley, and one of the first acts of this body was the appointment of the taxidermist who still holds office. In 1875 the amount voted was increased to £600 a year, a second assistant (F. J. Bourne) was appointed as caretaker, and it was decided to erect a permanent building on a site granted for the purpose in Great King street. The design selected was that of Mr. David Ross, F.R.I.B.A., and the foundation stone of the present building was laid in December, 1876.

No one can call the Museum, as it stands, anything but ugly, but it must be remembered, in justice to Mr. Ross, that his design provides for two wings, one at each end of the present permanent building. When these are added (when?), and the cold grey of the concrete is hidden by suitable painting, the Museum will make a decidedly handsome erection. Internally it serves its purpose very well; its chief faults are the absurdly narrow and inconvenient staircases, the insufficient slope and defective construction of the roof, resulting in constant leaks, and the presence of cross-lights, which often interfere seriously with the view of the specimens in the cases.

The first portion of the building erected was the back part or lean-to, containing the curator's room, preparation rooms, etc.; and in this Captain Hutton and his two assistants set to work to prepare specimens in sufficient number to make some sort of show when the new Museum should be ready to receive them. How they worked will be obvious to anyone who considers that the collection of mammals, the general collections of birds, fishes and reptiles, the shells, minerals, etc., are now practically what they were when the Museum was opened to the public in 1877. I shudder to think what might have been the condition of the institution with a less competent curator and with less skilful assistants.

The entire cost of the building and fittings was about £12,500. It was opened to the public on August 11th, 1877, the Committee taking what was considered the very revolutionary step of keeping it open on Sundays as well as on week-days. In the same year the Otago Museum Act was passed setting aside an endowment for the maintenance of the Museum—to be shared, alas! with the Athenæum—and vesting its management in the Council of the University. This latter step was a stroke of genius; it ensured the Museum a curator of some scientific standing, since it was an understood thing that that office was to be held *in commendam* with the Professorship of Biology, to which Captain Hutton had been appointed; and it provided the University with an essential adjunct to the teaching of Natural History.

In 1879 Captain Hutton was appointed to the Chair of Biology at Canterbury College, and after an interregnum, during which the Museum was ruled by Professor Ulrich, the present curator entered upon his duties on June 8th, 1880. Since then, I am happy to say, our annals have been tiresome, and only two events have happened which it is necessary to chronicle. In 1890 a temporary south wing was added in the form of a hideous wood and iron erection which will, I hope, continue to be an eyesore to the citizens of Dunedin until they are patriotic enough to replace it by a permanent structure. The present excrescence was originally a part of the New Zealand and South Seas Exhibition of 1889-90, and its erection was rendered necessary by the acquisition of numerous valuable collections presented to the Museum at the close of the Exhibition. The most important of these are the magnificent collection of New Zealand timbers, presented by the Government, and the fine carved slabs of a large Maori house, bought, owing to the energy and enthusiasm of Dr. Hocken, by public subscription.

The other event to which I referred is the colouring of the inside of the main building. The ground tint chosen is not entirely successful, but is a vast improvement upon the cold, dirty grey which previously struck a chill into the heart of the susceptible visitor. It should also be mentioned that in 1889 a very efficient biological laboratory was made by joining two of the rooms in the basement, the two corresponding upper rooms of the "lean-to" being used for lecture room and library.

One thing about the Museum should, I think, be widely known. It is the only indoor place of public resort in the city; it is open every day in the year; and it costs the ratepayers not one penny, being supported by landed endowment, which at the present day yields a smaller income than it did when first set apart for its purpose sixteen years ago. If these facts were borne in mind, I hardly think the citizens of Dunedin would consent to receive so large a slice of its woefully diminished income in the shape of rates.

T. JEFFERY PARKER.

Matters Relating to the School of Mines.

In the admirable address "On the History of the Otago University," delivered by Dr. Shand at the celebration of the twenty-first anniversary of the University, the history of the School of Mines, so far as regards the creation, progress, and present teaching capabilities and attendance of this institution, has received due consideration. As some additional information regarding the objects of the School might be of interest, the following notes have been drawn up, with the view of explaining certain circumstances which, in some measure, impede the fair progress of the School, and unfavourably affect those students who study for the Associateship in the Mining Division, and desire to obtain mining managers' certificates in New Zealand.

On glancing at the educational results of the teaching in the School of Mines, one is struck by the fact that most of the past students who have succeeded in attaining to responsible good positions did so outside of New Zealand, thus favouring the opinion the writer has occasionally heard expressed—" that State support to the School of Mines is of questionable utility if, after receiving their education at comparatively small expense to them, students leave our shores and use their knowledge for the benefit of other countries which have spent nothing in training them." At first sight, this may seem a formidable indictment; but, based as it is upon a rather one-sided, if not selfish, view of the *raison d'être* of professional schools, it quite ignores the main principle upon which such schools are nowadays established in all civilised countries. This principle is to afford parents opportunity to have their sons trained in professions promising them a satisfactory status and income in after-life. If their own country offers openings in this respect, no doubt the young men remain; but if it does not, they are obliged, and prepared, to try their fortune in other countries. And so stands the case with our past mining students. All would gladly stay in New Zealand if suitable positions, with some promise of advancement, were available; but this, unfortunately, is the case to but a very limited number. And here, moreover, comes in one of the adverse circumstances before alluded to—namely, that the certificate of mining manager can only be obtained from the Mining Department by passing a theoretical examination held by a Board of Examiners in Wellington, and on production of satisfactory evidence of engagement in practical work for three years in metallic mines, and for five years in coal mines, for the certificates of metal mine manager and coal mine manager respectively. Now, considering the extensive range of subjects in which a student has to pass examinations on going through the curriculum of our school—examinations in the aggregate, no doubt, more difficult than the one to be passed in Wellington—it is surely not too much to ask of the Mining Department that those of our students able to produce the diploma of Associate in Mining should be spared the expense and trouble of the Wellington examination. The University Council having been informed of the bearings of the case, is understood to have made representations to the Minister of Mines in this respect, which we may hope will have a favourable outcome.

But it is also in regard to the prescribed lengths of the terms of practical work that, in the writer's opinion, some concession ought to be made in favour of Associates in Mining—say, a reduction from three years to two for the certificate of a metal mine manager, and five years to three for that of a coal mine manager. For it stands to reason that, with his knowledge, acquired from the lectures, of the nature and principles of the various kinds of mining work, the student will soon become familiar with the latter, learn to estimate their value, and difficulty, and time of execution, and—what is of great importance, but for which the reduced term mentioned is adequate—gain some experience in the management of men. We have a case in proof of this in one of the past students, F. Baldwin, who, with the practical knowledge and experience derived from only a few months' practical work during the vacations, was yet able to conduct, to the satisfaction of the general manager, the working of one of the gold mines of an Indian mining company, in which up to 100 men were employed, and where he had to do all the charging and firing of bore-holes with his own hands.

One of the regulations for the Mining course at the School is to the effect that, besides passing the prescribed examinations, the student has to produce certificates of having for twelve months been engaged in practical work in mines before he can claim the diploma of Associate in Mining. To complete as large portion as possible of this working term during the two vacations in the three years' course is obviously of the greatest importance to him, because it not only helps him to understand more easily the mining lectures, and is important to him in a pecuniary respect, but he comes thereby also into the position—what he is especially anxious for—of being able to claim the diploma at the earliest possible date after leaving the School. For this document is the chief testimonial he can bring in proof of his qualifications, in case a suitable post should offer worth making application for. Considering now that the time spent in some necessary rest after the session, and in enquiries, travelling, &c., leaves only three to four months of the vacation available for practical work, students find considerable difficulty in inducing managers of mining companies to employ them for such a limited period; in fact, most of them are never sure of obtaining work. The case is quite different with the students of the Mining Schools of Prussia, Saxony, and Austria, where each one has a regular and systematic course of practical work laid out for him by the Mining Departments—the mines there being all under the control and management of the Government.

It deserves, however, grateful acknowledgment that some of the managers of our mining companies, notably of the Kaitangata and Westport, have for some years past given work regularly to a few of our students during the vacations, and are understood to have signified their willingness to do so in the future; but as the number of students requiring work may range up to twenty and over, it is sincerely to be hoped that the managers of other mining companies will come forward and follow the example of goodwill and liberality set by the managers of the mining companies mentioned. It is for a cause well deserving every support.

U.

The Otago University Debating Society.

Of all the institutions now existing in connection with our College the oldest is the Debating Society. And, arising probably from this fact, this institution for many years possessed the distinction of being the centre of the University life, from which radiated the social intercourse of the students of the boyhood of the College. In its infancy the Otago University was a seat of learning only. Most of the students were engaged in other pursuits during the day, and, beyond attending classes, took no further interest in University work, and, so far as history tells us, took no interest in their fellow students. But about the years 1876 and 1877 the spirit of *camaraderie* began to show itself.

The earliest development was, if memory serves aright, the formation of a cricket club, which had an existence meteoric in its brilliancy and brevity. There happened to be a dozen town students together in these years who could, and did, meet regularly during the cricket season, but as they were replaced, in part, by country men the summer season was not favourable to the congregation of the alumni, and cricket had to be given up. But the advantages and pleasures of combination had been tasted and were found too sweet to be lost. Thanks to the energy of Mr. George Montgomery, one of the most earnest and most competent students whose names have been inscribed upon the books of the College, a general meeting of the students was held on June 7th, 1878, for the purpose of considering the advisability of forming a Debating Society in connection with the Otago University. The meeting was largely attended and the following resolution, proposed by Mr. George Montgomery, and seconded by Mr. W. D. Milne, was carried with enthusiasm:—

"That a University Debating Society be formed consisting of students who are now attending, or who have attended the various classes." A provisional committee was appointed to prepare and draft rules, and on their adoption, Mr. Montgomery was appointed secretary and treasurer of the Society. The office of secretary has ever been in this Society, as indeed it is in all like societies, the most important, entailing practically all the work of arranging the syllabus and seeing it carried out.

On June 28th, the Inaugural Address was delivered by Professor Macgregor, in the lower hall of the Museum, to a large and fashionable audience, presided over by Dr. Stuart, then Vice-Chancellor of the University. The adjective "fashionable" is specially to be noted because it imports that there were a large number of ladies present. As the worthy professor had prepared an address for students only, dealing with the influence of heredity and early environment on the development of the individual, it required all his skill and tact to turn his intended remarks into an address suitable to a mixed audience. But all passed off well, few, if any, of those present being visited with a suspicion of the truth.

A fortnight later the ordinary business of the Society was proceeded with. The names of those taking part may be of interest. The chair was taken by Mr. T. C. Farnie; Mr. F. H. Jeffcoat recited Mark Antony's speech, from Shakespeare's "Julius Cæsar;" Mr. D. M. Stuart then gave a "Review of the Ballad Poetry of Macaulay and Aytoun;" so run the minutes. Regular meetings were then continued. On the 16th of August the rule as to the appointment of two critics was carried, and at the same meeting it is recorded "Mr. Fergus Hume then read an original poem, entitled 'Actæon,' which called forth the warmest praise from all present." The record does not add that the diphthong was replaced by a short vowel in the name of the hero. Probably owing to this disfigurement the poem does not rank among the best known of the now popular author's productions. The annual report for the first session contains the following clause:—"Of the success of the Society no better proof can be given than the fact that as the session advanced the meetings excited more and more interest, and were more and more largely attended. Indeed, the greatest difficulty with which the Society has had to contend during the past year has been the want of a suitable room in which to hold its meetings, several of which were inconveniently crowded. Financial report: Received 81 subscriptions of 5s each."

The session of 1879 saw two lady students, Misses Freeman and Montgomery, on the Committee of Management, Mr. George Montgomery retaining his dual capacity. On the 4th of July, on the motion of the secretary, seconded by Mr. G. Hirsch, it was resolved "That a University Magazine be published in connection with this Society," and Messrs. D. M. Stuart, A. R. Barclay, and G. Montgomery were elected editors with a suggestion that "the magazine should be of the same size as the old New Zealand Magazine." Difficulties seem to have cropped up and some internal dissension, for on October 10th we find a resolution carried increasing the number of editors to five, and the resignation of those already elected. The annual report says, that "owing to causes, that cannot here be stated, the publishing of the magazine was postponed for a year." The membership this year rose to 46.

At the annual meeting in 1880 the following resolution was carried:—"That this Society desires to express its regret at the loss of so valuable a member as its late secretary, its appreciation of his services while he held office, and its hope that his career at Home may be both pleasant and prosperous." Well deserved was the appreciation, but the good wishes were not destined to be fulfilled.

SIR JOHN RICHARDSON.

George Montgomery was only vouchsafed time enough to make known at Edinburgh his ability and promise, when the heavy hand of death was laid upon him.

His successor in the office of secretary was his brother Alexander, while the duties of the treasury were entrusted to Mr. W. D. Milne. At the first meeting the magazine cropped up again, and at the second the number of editors was again reduced to three, and Messrs. Stuart, Barclay, and Farnie were appointed. The business of the year was ordinary routine essays and debates. On October 8th one of the editors, in answer to a question, replied "that the magazine would be published before the end of the session." This is the last record relating to the magazine—the annual report is significantly silent on the matter.

In the year 1881 the custom, still continued, of appointing senior students vice-presidents of the Society was first adopted—Messrs D. M. Stuart, and A. R. Barclay being the first holders of this position. In this session, owing doubtless to the reticence of some of the younger students, it was decided to draw the names of those present from a ballot box and "that each person speak as his name is drawn or not at all." This resolution was rescinded early in the following session. It was also decided to take a vote at the close of each debate.

At the annual meeting in May, 1882, the Society's prize for the best essay by a junior member was founded, but was not opened for competition until the following year.

During this session Mr. A. R. Barclay occupied the position of secretary, being replaced in the following year by Mr. T. Smaill. During the session of 1883 the magazine question again cropped up, this time emanating from the Canterbury College Dialectic Society. It was decided by the Debating Society to heartily support the proposed magazine, and a vigorous correspondence between the two colleges ensued. In the following year the first meeting of Convocation, which was held in Christchurch, gave an opportunity for a conference of Otago and Canterbury graduates, and a memorable conference was held. But the magnitude of the enterprise on the proposed lines—a monthly New Zealand magazine—combined with the feebleness of the support promised by the literary and scientific men of the colony, prevented it from being carried out. The fate of "The New Zealand Magazine" was too fresh in the minds of the men of colonial reputation to allow them to become enthusiastic in a new venture controlled by the newly-made graduates of our University. The proposal was too ambitious, and it was left to a later race of students in the year 1888 to successfully produce a magazine on more modest but sounder lines, the history of which will be found elsewhere in this record issue.

The prize essay scheme developed during this session, and the first prizeman was Mr. W. M. Smith, the subject of his essay being

"Adam Bede." The loss sustained by the Society in the untimely death of Mr. A. T. Stuart is recorded in the minutes of this year.

The year 1884 was marked by a general shaking of the dry bones in University matters generally. There seemed to arise in this year a desire for the enjoyment of that "University life" which plays so great a part in the older universities of the world.

The Debating Society, which still enjoyed the distinction of being the students only common meeting ground, was sorely exercised as to the proper treatment of the new movement. At an early meeting in June a letter was read from Professor J. Mainwaring Brown, who ever took a keen interest and active part in the doings of the Society, suggesting that a public debate should be held during the session. This was accepted by the Society as a worthy notion, and the Committee was instructed to suggest some form of social gathering to which the pubic debate would be a preliminary. "A social gathering in the University library" was at first decided upon in preference to "a social meeting in the form of a supper;" but financial scruples intervened, and it was finally decided that the Society thought it undesirable to take any further steps in the matter. The result of this position was the formation of an independent committee, and the establishment on separate lines of the most important institution—the University Ball. Another outcome of the discussion was the adoption of a new rule defining the objects of the Society, and a motion brought forward by Mr. J. R. Wilkinson, and seconded by Mr D. White, was fiercely discussed. It proposed "that this Society be called the Otago Students' Club," and simply anticipated the formation of the now existing Students' Association. The motion was finally negatived, but the necessity for some general organisation was shown by the holding during this session of two general meetings of students to discuss questions then burning, and, indeed, not yet settled—"The division of the College session into terms" and "the proposed B.A. regulations of the New Zealand University."

The roll of the Society, kept by Mr. R. Gilkison as secretary, during this session showed 57 names, 1883 having shown 52, with high-water mark in 1881 of 60. The prize essay was not awarded this year.

Strangely enough, in view of what has just been said, the annual report for the session contains the following:—"The year just gone has been a year without any history, but it was a year of much quiet progress and honest hard work."

The year 1885 was marked by the introduction of an elaborate set of 37 standing orders of debate, another outcome of the recent meeting of Convocation where the like provision had been made, and by the appointment of a committee to assist the representatives of the New Zealand University Senate in the arrangements for the graduation ceremony. The ordinary business of the Society proceeded as usual, and although the roll of members, as shown by the treasurer's report, showed a decrease, the average attendance rose from 27 in 1884 to 45 this year. The secretary for the term was Mr. W. A. Chapple.

From and including the session of 1886 the records of the Society are confined to reporting the ordinary work of a debating Society. The meeting opened with reading, which was not criticised. Mr. So-and-So then delivered his essay, or a debate was then opened, and the meeting closed with a vote of thanks to the chair. During this session two efforts were made to introduce subjects of University interest, but outside the syllabus—one in connection with the students' room, the other concerning the division of the University year; but both were ruled out of order. The prize essayist this year was Mr. H. C. Barclay, the subject being "The Origin of Species." Mr. J. A. Johnston discharged the duties of the secretaryship.

In July, 1887, a motion was proposed by Mr. Jas. Hutchison in the following terms:—"That, in the opinion of this Society, the time has now arrived when it is desirable that a University journal should be published under the auspices of the Society, and that a committee be appointed to report before the close of the session on the prospects of such a publication, the committee to consist of Messrs. McNab, Palmer, Sidey, H. C. Barclay, Johnson, and the mover." The secretary for the year was Mr. W. A. Chapple, and the prize essayist Mr. R. S. Collie, his subject being "The Novel: its Growth and Value."

At the first meeting held in the the following year last year's essayist was appointed secretary, and the question of the journal finally disposed of so far as the Society was concerned. It was resolved that the report of the Committee be referred to a general meeting of students, to be called by the Committee upon some suitable evening, and that that meeting consider the advisability of starting such a magazine. The result of this general meeting was the foundation of that most excellent publication, The Otago University Review.

Although, judging by the record of the number of members present during this session, the Society maintained its popularity, great difficulty was experienced in getting members to speak on the various topics under discussion and a new rule found favour, giving the chairman power to call on any member to speak, "and that the member so called upon be expected to say something on the subject for discussion." The annual report is somewhat apologetic in this matter, but the rule being applied with discretion was found to answer very well. The report concludes with the following paragraph: "One last word must be added expressive of the great loss which the Society has sustained by the lamented fate of the late Professor Brown. Professor Brown entered with the greatest enthusiasm into every matter which concerned the students of this University and his services were always tendered with a characteristic heartiness and willingness. Your Committee desire to place on record their highest esteem for the late professor; their high appreciation of his services, always ready to be enlisted on behalf of the Society, and their most heartfelt regret at his untimely decease."

A fresh departure was made on the year 1889 on the motion of Mr. T. K. Sidey. The encouragement of shorter work was decided upon, so that two or more short essays might be taken in one night, and the 'Farrago' was borrowed from our sister Society in Canterbury College. Although a humourous writer in the REVIEW took great exception to the name bestowed on this new development, it proved a signal success. Nine items, complying with the conditions of originality and brevity, were presented on the first evening, and in order to preserve the desired anonymity, were read by the secretary, Mr. J. R. Macdonald. The vote taken at the close decided that the "Capping Song" was the most meritorious, but the prize-winning author declined to reveal his identity.

Another innovation was a symposium on "My Favourite Novelist" which produced five papers by different students, giving their reasons for their respective preferences. The Committee in their annual report deplore the small competition for the prize essay. The prize was this year awarded to Miss Marion White for a short tale entitled "Irene." Miss White had been the successful competitor in the previous year with an essay on "Vanity Fair."

The year 1890 was not a flourishing one in the Society although the meetings were held regularly, aud the previous years attractions continued. A new prize was instituted for the best debater, "to be decided by the sum-total of the votes of members present at debates held during the year. The competition for this was not great, but the winner was found in Mr. R. S. Collie." The prize essay was again furnished by a lady student—the successful competitor being Miss Bulau with a novellette entitled "Marjory's Good-bye."

The following year almost witnessed the dissolution of the Society. The inaugural address which had been continued every year since the formation of the Society, with but one exception, was dispensed with and it was not until the last day of July that the first meeting was held. Unfortunately during this and the preceding year the minutes share in the general atrophy. But when a start was made Mr. J. McKenzie was appointed secretary, and the regular fortnightly meetings were continued. The assistance of some of the older students was invited and freely given, but the attendance was not what it should have been. Mr. J. Collie supplied the prize essay, the subject being "Poetry of the Nineteenth Century." The debating prize was not awarded. An important change in the Constitution of the Society was carried out by the Committee this year—the management being handed over to the Executive of the Students' Association, which body now appoints all office-bearers for the Society.

1892 saw another innovation in the proceedings. The Society got under way at an early date, and the usual inaugural address was delivered. The Committee determined to still further relieve the tedium of essays and debates, and a piano was added to the stock of the Society. From this followed musical items—instrumental and vocal—introductory to the more serious business of the meetings. An excellent programme was prepared and carried out, but the traditions of the institution were sadly broken by the introduction of the professors as essayists. Three out of the four essays in the syllabus were delivered by the professors, and although, doubtless, the audience benefitted by the change, there seems to be evidence of a tendency to make the Society somewhat parasitic. But the interest was maintained throughout the year, probably owing to the more instructive nature of the pabulum supplied. But the following paragraph which occurs in the minutes of several meetings may have influenced the attendance. "Tea and cake were then handed round." The syllabus for the current year, 1893, follows on similar lines.

The range of subjects dealt with by the Society is a wide one, but, save in so far as a distinct academical section is added, does not differ widely from that of the commoner variety of debating societies. At the first debate of the Society the members declared themselves opponents of the special creation theory of life, and this subject seems thereupon to have been settled. Not so with other subjects. Chinese immigration and its results has appeared no less than three times in the syllabus. German universities also figure three times. Woman's franchise has been negatived on two separate occasions by large majorities. In 1885 a debate extending over two nights was held on the subject, "Should Ladies be admitted to the Medical Profession?" and resulted in a vote in favour of the affirmative by a two-thirds majority. In 1891 the question re-appeared, this time under the slightly altered heading, "Should Women be admitted to the Medical Profession?" and was affirmed by a three-fourths majority; but the interests of the then present medical students were preserved by an addendum that the admission should be postponed till the system of the Medical School was remodelled. The Irish question has cropped up in various forms, beginning with an essay on "Fenianism" in 1878, passing to the question of the Abolition of the Land League in 1881, and culminating in a unanimous vote in favour of Home Rule as opposed to Imperial Government in 1886, the only case of unanimity on any question recorded in the minute-books of the Society, and, indeed, it might be added, the only case of unanimity on this subject yet discovered. The uselessness of the Legislative Council was affirmed in 1882 and again in 1888. The necessity for manhood suffrage was affirmed in 1881, and in the same year the Society declared in favour of a Republic as opposed to a Monarchy by a majority of two to one.

In the realm of letters the usual essays abound. The first in the record, delivered on September 18th, 1878, possesses more than a passing interest. The essayist was Miss Montgomery, the subject, "Thackeray," and the delivery of the essay was the first occasion in which a lady had appeared in public in this city in such a character. One or two lecturers had been heard in Dunedin before—one an immigration agent, and one a revivalist preacher—but Miss Montgomery was the first to adopt the *role* of an essayist in literature. The meeting was largely attended by the outside public, and caused some little stir in the then contracted literary circle of the town.

Of the other essays a few names must suffice: Shakespeare, in bulk and in parcels, George Eliot and her separate works, Tennyson, Scott, Longfellow, Byron, Scott, Wordsworth, Holmes, Moliere, Swift, Shelley, Kerrick, Whittier, Edwin, Arnold and Artemus Ward have all found commentators. But it is needless to cite further examples. Everyone who has had experience of debating societies (and who has not ?) can supply lists for himself beginning with trial by jury and ending with cremation and capital punishment. Of the academic questions discussed, Science v. Classics was the earliest form of a question now slowly solving itself, and, relying on memory only, was decided in 1880 distinctly in favour of the latter. The specialization of the work at the various colleges of the New Zealand University was approved in 1887. In 1889 it was not deemed advisable to make the B.A. degree compulsory, either for the ordinary medical course or for the M.D. degree. Opinions were equally divided in 1891 as to the advisability of retaining Latin as a compulsory subject for the B.A. degree. The subject of academic dress has been put to the vote during this 1893 session, and the minutes are worth quoting—"resulting, as many of the ladies had gone owing to the lateness of the hour, in a narrow defeat for the gown party."

Such is a short outline of the work of the Society during the past fifteen years; a work which has without doubt left its mark on the men and women who have taken part in it. It is easy to make light of debating societies, and the subjects discussed, and the results of the discussions, but the work of such a society, when minds are expanding and habits of thought and life forming, cannot be too highly estimated. It is sincerely to be trusted that the present race of students will appreciate the advantages of this institution, and restore it to its pristine vigour and usefulness. Many of the graduates of Otago University look back to the fortnightly Friday evenings as a period of pure enjoyment, and locate there the formation not only of powers of thought and expression, but also of friendships, which, though now too often weakened by separation, still have vitality enough left to last till distance disappears.

The Otago University Students' Association.

While the Debating Society may justly lay claim to the distinction of being the oldest of our University institutions, important amongst those of later birth is the Students' Association. Year by year around our *Alma Mater* there grew up society after society, institution after institution, ceremony upon ceremony, with no central guiding body in existence to manage these institutions and direct the energies of the students into their proper channel. Consequently the existence of many of these institutions, depending entirely upon the efforts of individuals, was ever in danger, and the students themselves being allowed to run riot began to acquire, on such occasions as the capping ceremony, an unenviable reputation for rowdiness, mainly owing to the fact that, for want of unity, their energies were misdirected.

The want of some such central body becoming more and more obvious, not only to manage such University institutions as were unable to stand on their own feet, but also to watch over the interests of students in regard to matters of grievance cropping up in the course of University work, a meeting of students was held on the 20th May, 1890, to consider the advisability of forming a "Students' Association." The meeting was unanimously in favour of the proposal, and a committee, consisting of Messrs. Gunn, Mouat, Palmer, MacDonald, Spencer, and Reid, was appointed to draw up a constitution to submit to a further meeting. After many lengthened and animated meetings of this committee, a set of rules was drawn up and subsequently submitted to a large and enthusiastic meeting of students in Professor Shand's class-room on May 30th, 1890.

After considerable discussion these rules were adopted, the most important of them being as follows:—

1. This Association shall be called "The Otago University Students' Association."

2. The object of this Association shall be to control all matters in which students as a body are interested.

3. All matriculated students and graduates of the University of Otago, and all *bona fide* mining students—such being defined as those who are attending three classes in the Mining Curriculum—shall be entitled to become members of this Association upon payment of the annual subscription.

4. The annual meeting of the Association shall be held not later than the second Friday in May in each year, at which meeting a President and two Vice-presidents shall be elected by the members of the Association. At or before this meeting each faculty—namely, Arts, Medicine, Law and Mining—shall elect one delegate for every

ten or part of ten members it has on the roll of the Association, and such delegates, together with the President and Vice-Presidents, shall form the Executive of the Association.

5. The Executive shall appoint one of its own members as secretary and treasurer.

At the same meeting Mr. W. E. Spencer, M.A., B.Sc., was elected President, and Messrs. A. Hendry, B.A., and J. R. MacDonald Vice-Presidents of the Association. The first representatives of the Faculties elected in accordance with Rule 4 above were: Messrs. Campbell, Crawford, Young, Montgomery, M.A., Line, B.A., Palmer, M.A., Menzies, Butement, Reid, Hogg, Collie, B.A., Sidey, B.A., LL.B., Mouat, B.A., Baldwin, and Fitzgerald.

The Executive met for the first time on the 4th June, at which meeting Mr. Mouat was elected secretary and treasurer. The work of this Executive Committee during the session of 1890 may be briefly summarised.

The Committee early set about securing two furnished rooms, one for the use of the ladies, and the other for the use of the male students. After several negotiations, the Executive succeeded in getting the Council to grant and furnish for the exclusive use of the lady students the room then known as the Professorial Board room, while the old students' room was renovated and refurnished for the use of the male students, partly by the Council and partly by a levy of two shillings each on the members of the Association.

This year's Executive also undertook and carried out the ordinary routine work, which has become part of the business of each year's Executive. The annual ball, capping ceremony and dinner, and the socials held from time to time during the session, were all carried out this year by sub-committees of the Executive, and since then the management of all these institutions has rested with the Executive. In this year we note the first attempt to have the capping ceremony held in the afternoon. Chiefly owing to the exertions of the Executive, the Chairman, Dr. Scott, agreed to hold the ceremony in the evening, and the orderliness of the proceedings justified his action.

The social held this year on June 28th was the inauguration of a series held from time to time during the succeeding years. In reference to these socials the annual report says: "Your Executive would strongly urge upon the incoming Executive the advisability of making these socials a regular institution, taking care that one, if not more, should be held during the year, as they have been found an excellent means of promoting a spirit of sociability not only among students, but also between the students and the teaching staff, of which feeling there is at present a sad want."

During the year the Association began to take that interest in the other University institutions that it has ever since shown. Its Executive lent its helping hand to the Football Club, trying to induce students to support it in preference to all other clubs. The Tennis

Club also came in for its willing aid. In this year the Council had built upon one of the Club's courts a building for the purposes of the Mining School. The Association, by its Executive, petitioned the Council for compensation, a petition which two years later, in 1892, the Council granted, donating a large sum towards the replacing of the court.

In this, the year of its initiation, the work of the Association had been to a great extent tentative. It remained still for future Executives to carry out and perfect the work done. And yet its work had not been in vain, and its maintenance had been found to be not unfruitful of good. "Although," says the annual report, "the Association has not dealt with matters of such importance as will form the work of future Executives, still, on the whole, good work has been done; and your Executive are strongly of the opinion that the institution and maintenance of this Association is fully justified by the necessity that exists of guarding our institutions."

The second annual meeting was held on the 8th May, 1891. The annual report and balance-sheet were read, the latter showing the receipts to be £127 16s 9d, and the expenditure £132. At this meeting an important change was made in regard to the management of the Debating Society and the Review. Formerly each of these institutions had been run independently of other institutions. Each had its own members, appointed its own officers, had its own meetings, and was separately financed. But the danger of these two most important institutions ceasing to exist, a danger very imminent at the opening of this session, caused a resolution to be passed at this meeting by which the control and management of these two institutions was transferred to the Association. Ever since the Executive has appointed the officers of these institutions, and managed as they now are by the Executive, the results have proved highly satisfactory.

The office-bearers appointed for this year were:—President, Mr. A. Hendry, B.A.; Vice-Presidents, Messrs J. R. MacDonald, and F. Baldwin. The number of delegates elected by the Faculties was fifteen, making an Executive of eighteen members. At their first meeting, held on the 14th May, these members elected Mr. J. G. Stuart, B.A. secretary and treasurer. At this meeting also a hearty vote of thanks was passed to Mr C. M. Mouat for the valuable services he had rendered as secretary to the Association. The ordinary work of the Association was carried out this year with the usual success. The annual ball, capping ceremony, and dinner still found the Executive ready to perform its often arduous duties. The practice of holding periodical socials was continued to the great advantage of the students. Difficulties arose as to the carrying out of the capping ceremony in the usual style, but a general meeting of the Association decided that the attempt should be made. Both ceremony and dinner were highly successful. The annual ball was ably carried out under the supervision of Mr. Baldwin. The Review and the Debating Society, now under the control of the Executive, had most successful seasons. The Association had, on the whole, reason to congratulate itself on the work done.

Besides this ordinary work, the Executive took up the cudgels on behalf of the Football Club. A great number of students had been in the habit of playing for other clubs. The Executive by pointing out the wrong they did their own club by such action, succeeded in inducing many of these to join the University Club. The report at the close of this year, referring to this matter, says that the "Executive are glad to learn that their action in the above matter has been attended with beneficial results."

Another matter of some importance led ultimately to a remodelling of the constitution of the Association. The matter may be stated in the words of the report:—"Your Executive perceiving that under the then existing rules of the Association the lady members of the Association had no representation on their body, instructed the secretary to write to the lady students asking them to meet and elect male representatives, and thereupon three ladies' representatives were elected, two of them being already representatives of the Arts Faculty.

"A difficulty having cropped up on a subsequent occasion with regard to the right of the two gentlemen above-mentioned to exercise a double vote by virtue of their position as representatives of the lady students and also of the Arts Faculty, it was resolved that to provide for this and other contingencies, and also for efficient representation of the lady members, to appoint a committee to draw up a new and complete code of rules for the governing of the Association."

The committee appointed consisted of Messrs. Hendry, MacDonald, Stephens, Smeaton, and Stuart. This committee submitted a code of rules to the Executive and to the Association. These rules were adopted at the general meeting held on October 2nd. By these rules the lady students were formed into a separate faculty with special representation, and the qualification for membership was slightly enlarged by allowing all unmatriculated students who have attended four or are attending two classes to become members.

The third annual meeting of the Association was held on the 6th May, 1892. The annual report and balance-sheet were read, the latter showing the total receipts for the year to be £126 6s 9d, and the expenditure £112 9s 4d. Mr. C. M. Mouat, B.A., LL.B., was appointed President; Messrs. C. Little, M.A., and T. D. Pearce, M.A., Vice-Presidents; and Mr. J. G. Stuart, M.A. (re-elected), Secretary. As representatives, twenty-one delegates were elected, the Executive thus consisting of twenty-five members. Mr. E. C. Cutten, B.A., was elected Treasurer. Some difficulty being experienced as to the carrying on of the Review, the matter was submitted to this meeting, and it was decided that the Review should continue to be published at the annual subscription of four shillings.

The Executive carried on this year as successfully as usual the Debating Society, the Review, the Annual Ball, the Capping Ceremony and Dinner, and the now usual University socials.

At the annual Capping Dinner a testimonial was presented to Mr. J. R. MacDonald on behalf of the Association for the many and great services he had rendered in managing and promoting University institutions.

Now that this ordinary business had become firmly established, the Executive began to widen the scope of its work and to look around to see what points of our University system might with advantage be amended. Early in the year the Executive appointed a committee to wait upon Sir James Hector, the Chancellor of the New Zealand University, then in Dunedin, to ascertain whether the results of the Degree Examinations could not be notified sooner and with more accuracy, and to point out the inconveniences students laboured under, owing to such delay and inaccuracy. Unfortunately, Sir James Hector left Dunedin before the committee had an opportunity of approaching him, and thus an important matter requiring attention was left in abeyance.

In May, 1892, the Executive appointed another committee to consider the following matters:—

1. The delay and inaccuracy in the notification of the Degree Examination results.
2. The present term system.
3. The length of the session.
4. The functions of the Professorial Board of Advice.
5. The position of the Law, Mining, and Medical Schools.

No formal report was ever presented by this committee owing to the pressure of other matters, but one or two of the subjects there ventilated have since received attention from the Council, and from a future Executive.

During the year an important change in finance was made. The annual report says: "The largely increasing financial business rendered the continuance of a system of personal treasurers inconvenient. Your Executive have therefore opened a banking account in the name of the Otago University Students' Association, through which all moneys received by them are passed, and the account is operated on by cheque signed by the treasurer for the time-being on behalf of the Association." This has reduced the growing financial business of the Association to a systematic form.

We may briefly here refer to the opening of the session of 1893. The fourth annual meeting was held on May 5th. Some further alterations were made in the constitution, notably an easier qualification for non-matriculated students, and a decrease in the representation of the Faculties from one in ten or part of ten to one in fifteen or part of fifteen. The balance-sheet for the year showed a credit balance of £15 17s 2d.

The office-bearers this year were: Mr. C. M. Mouat, B.A., LL.B., President re-elected: Messrs. L. A. Line, M.A., and M. W. Ross, Vice-Presidents. Seventeen representatives were elected by the Faculties, the Executive thus numbering twenty. The Executive elected Mr. F. H. Campbell, M.A., Secretary, and Mr. E. C. Cutten, B.A., Treasurer. Votes of thanks were passed at this meeting to Messrs. J. G. Stuart, M.A., for his valuable services as secretary for two years, and to Mr. J. B. Montgomery on his retiring from the office of captain of the Football Club held for so many years.

The Executive of the Association has this year continued on in the same lines as previous Executives. Strong in its inception, the Association has continued to increase in strength from year to year. By the union it gives the students it enables work that a year or two ago was left to individual effort, at the great risk of not being done at all, to be done carefully and expeditiously. But the work of future Executives will aim higher than merely exercising management or control over University institutions. It will also have no inconsiderable influence in the control of our University work, an influence, perhaps not openly manifested, but nevertheless perceptibly felt.

The "Otago University Review."

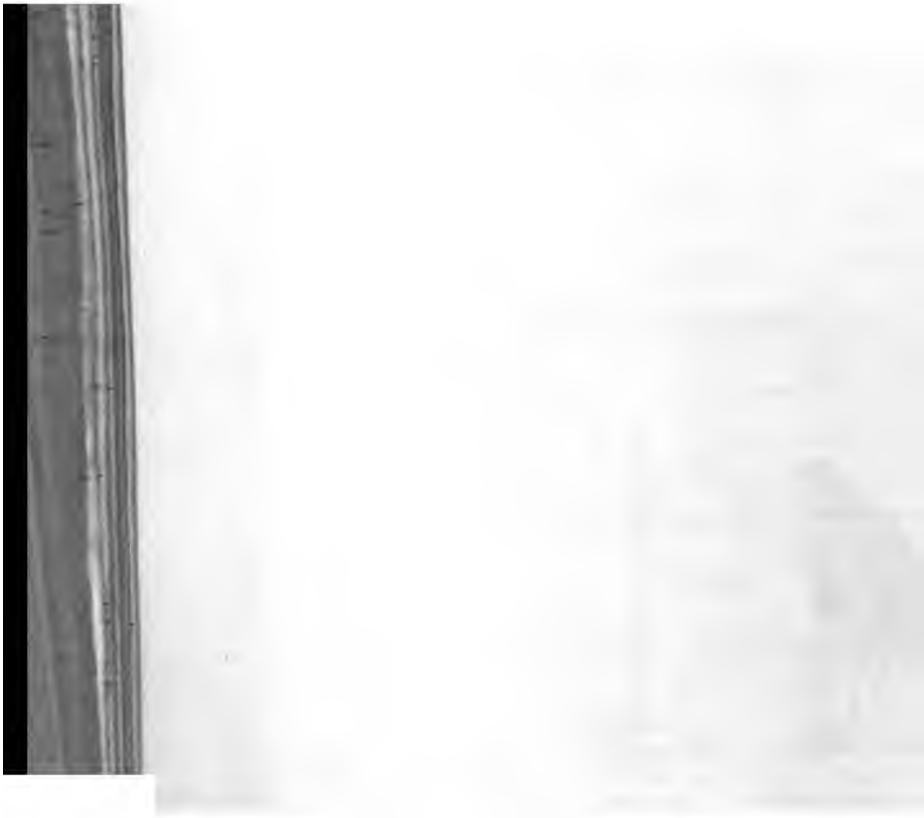
The first attempt to establish a magazine in connection with the Otago University was made about the year 1878, and was so far successful that a committee was formed, editors were appointed, and contributions were actually received, when some misunderstanding between the editors wrecked the whole scheme.

Some years later another and a more ambitious effort was made, the object of which was to establish a magazine in connection with all the colleges affiliated to the New Zealand University. A joint committee was appointed from the students of the Otago University and Canterbury College, and letters were addressed to all the leading men throughout the colony soliciting their support in the shape of contributions; but "the leading men," not valuing at its true worth the privilege of being allowed to write for "The New Zealand University Magazine," prayed, on various grounds, to be excused, and this attempt was abandoned.

Nothing daunted by these failures, some four or five resolute spirits, prominent among whom were Messrs. R. McNab and W. A. Sim, revived the subject in 1888, and, notwithstanding the lukewarmness of the majority of the students, the necessary preliminaries were arranged, and the "OTAGO UNIVERSITY REVIEW" saw the light in August of that year.

Previous to the advent of the REVIEW, the transactions of the various University institutions were recorded only in their respective

HIS HONOR MR. JUSTICE CHAPMAN.



inute-books; the doings of our athletic clubs received scant notice, any, from the daily press; the students of the Otago University mained in ignorance of what was happening in the sister colleges of e colony; the literary productions of the essayist, having sparkled r a brief hour in the presence of the Debating Society, were relegated the oblivion of a desk or trunk; and that long-suffering individual, e dissatisfied undergrad, finding no sympathetic editorial ear into hich he could pour his many grievances, was obliged to nurse his rath in silence and to consume whole columns of his own volcanic noke.*

By the energy and determination of Messrs. McNab and Sim, gether with a few other students who regarded University life as mething higher than one long ceaseless "grind" for exams, this ate of affairs was completely changed. In presenting to University rcles the first number of the Review, the editors thus set forth e aims of the journal:—To provide an outlet for the best literary ork of the students, both past and present; to chronicle University ws, not only of the Otago University, but also of the sister colleges roughout the colony; to record the doings of the University hletic clubs; and to set apart a column for correspondence on bjects in any way connected with the University. From year to ar these aims have been faithfully adhered to; the balance between e purely literary and the purely local side of the Review has been pt fairly true; and the journal has never deteriorated into a mere ronicle of small beer.

The first editors were Messrs W. A. Sim and J. A. Johnson, and e first business manager was Mr. R. McNab. The subscription was ted at five shillings per annum, and the first volume consisted of ree numbers, with a short supplement containing the results of the ass examinations.

In the second year of issue Messrs. J. Hutchison and J. R. acDonald and Miss Allen were appointed joint editors, with Mr. cNab again in the position of business manager. The subscription mained at five shillings, but the annual issue was increased to x numbers.

In the following year the editorship was intrusted to Messrs. acDonald and Hutchison, but the indefatigable Mr. McNab having ft to practice his profession in Invercargill, the duties of business anager were undertaken by Mr. W. Butement. This year the bscription was reduced to four shillings per annum.

In 1891 an important change was made in the general management of the Review. In previous years the annual meeting of the ebating Society had been seized upon as the only time when a fficient number of students could be got together to receive the annual report of the Review Committee, and to apppoint a committee for the ensuing session. Even at such times the number of students who remained after the business of the Debating Society had been concluded was lamentably small. Indeed on one occasion the total number present was only seven, being less by two than the number required to form a committee. These seven elected themselves, and added two absentees, rather than allow the publication to fall through. It was, however, felt that this haphazard style of doings things could not be continued. Accordingly, in 1891, Mr. J. R. MacDonald brought the matter under the notice of the annual meeting of the Students' Association, and succeeded, despite some opposition, in carrying a resolution transferring the management of the Review to the control of the Executive of that Association. During this session the editorial chair was filled by Mr. MacDonald alone, with Mr. J. McKenzie as business manager.

---

* It was at a later period that the glorious possibilities that lay hidden in the pping Ceremony were revealed; and, as yet, that all-powerful body, the dents' Association, had not even been dreamt of.

The fifth year of publication opened in 1892 with a staff consisting of Messrs. Pearce, Mackenzie, and Stuart as editors, and Mr. C. R. Richardson as business manager. During this year six numbers were issued, the control of the Review still lying in the hands of the Otago University Association.

And, finally, during the current year the editorship has been entrusted to the hands of Messrs. J. G. Stuart and A. H. Adams, Mr. Richardson still ably fulfilling the duties of business manager. At the beginning of the present session the publication of this work was decided upon, and the details in connection therewith entrusted to Messrs. J. G. Stuart, M.A., and C. R. Richardson, B.A.

Although still young, being only in its sixth year, the Review may now be considered to have passed safely through the pains and perils that beset infancy, and to have made a fair start on a long and useful career.

The Otago University Christian Alliance.

This institution dates its existence from the year 1886. Previous to that time there had been occasional meetings for prayer amongst the students, but it was not until the above year that the Alliance was constituted in its present form. The first regular meeting was held on the 12th of June. The following were the office-bearers for 1886:—President, The Chancellor, Dr. Stuart; Vice-President, Mr. W. J. Comrie; Secretary, A. H. Treadwell, B.A. Since that time the Alliance has held its meetings every Saturday morning during the session, its object being to stimulate a Christian interest amongst students and to create a fellowship amongst those who even in the stress and hurry of their university life are anxious to find in it a place for the consideration of spiritual things.

The history of the Alliance has not been eventful, nor has it experienced the vicissitudes of fortune which have fallen to the lot of many of its sister institutions. It has gone quietly on its way an unobtrusive and yet not unimportant factor in the student life of the Otago University.

During the session of 1892 the Alliance instituted a series of Apologetic Lectures for students. These were delivered in the chemistry room on Friday evenings, and were for the most part well attended. Lectures were given by the Bishop of Dunedin, Drs. Dunlop and Watt, Rev. A. R. Fitchett, M.A., and Rev. A. P. Davidson, M.A. During this session also was instituted the practice of holding meetings of the Alliance at stated intervals during the session on Friday evenings, thus allowing the many lady students who are interested to be present.

The office-bearers for 1893, the present year, are:—President, The Chancellor, Dr. Stuart; Vice-Presidents, Messrs. A. Morrison, B.A., and J. Mackenzie, M.A.; Secretary, Mr. A. McNab. The members of the Ladies' Committee at present are:—Miss Anderson, Miss Davy, and Miss Moore.

The ladies have taken great interest in the Friday evening meetings, and have regularly contributed papers upon some Christian topic.

University Dramatic Club.

ACT I.

The first performance of a dramatic nature in connection with the University took place on October 12th, 1889, when a charade was acted in the library under the auspices of the Haringa Club—a club formed by the lady students for the purpose of promoting an *entente cordiale* among the students. The play was on the word "Casement." For the first syllable, the trial scene "Bardell v. Pickwick" was acted. Mr. Mouat, as Sergeant Buzfuz, had the lion's share of the piece, and at his hands the extravagant language of counsel for the plaintiff received adequate justice. The other ladies and gentlemen taking part were: Mrs. Shand (Mrs. Bardell), Miss Fraser (Mrs. Cluppins), Mr. McKenzie (Sam Weller), Mr. Heatley (Mr. Winkle), Mr. Young (Judge), Mr. Tennant (Sergeant Snubbin), and Mr. MacDonald (Crier). For the second syllable of the word, an entertaining sketch, the subject of which was "Women's Rights in Relation to Mice," was given by Misses Alexander, Campbell, Little, White, Moss, and Mr. MacDonald, the bulk of the work falling on Miss Alexander and Mr. MacDonald, who discharged it to the evident satisfaction of the audience. In the representation of the complete word, Mr. Palmer, as a troubadour, serenaded Miss Bulau, who reclined gracefully at a casement. To this unpretentious beginning may be traced the origin of the University Dramatic Club. The first act had been played, and was due to the initiative taken by the Haringa Club.

ACT II.

The second act in the development of the future club opened one evening in the beginning of July, 1890, when a band of stalwart footballers burst into Mr. MacDonald's "diggings" and informed him that he, together with Messrs. Menzies, Mouat, and Campbell, had been appointed a sub-committee to "run" an entertainment in the City Hall on July 19th, in aid of the funds of the Football Club, the first part of the programme to be musical, and the second part dramatic.

"Only a fortnight's notice!" exclaimed Mr. MacDonald. "It can't be done in the time! The idea is absurd! You don't know what you are talking about!"

Expostulations and remonstrances were in vain. The football team had to go to Christchurch, and it was imperative that funds should be raised. Finally, at a somewhat late hour, the deputation withdrew, on receiving Mr. MacDonald's assurance that he would do his best in the matter, and that he already had an idea of something that might be attempted.

This idea was to make a selection from one of Goldsmith's or Sheridan's plays. After hurriedly glancing through several of these comedies, it seemed to Mr. MacDonald that, after cutting out the scenes in which Mrs. Hardcastle and Tony Lumpkin appear, there was still left, in "She Stoops to Conquer," a fairly connected play between the other characters, and he decided that, if Miss Alexander and Mr. Mouat were willing to take the parts of Kate Hardcastle and the Squire, he would endeavour to fill the part of Young Marlow himself.

These three characters being provided for, it was still necessary to find representatives of Hastings and Miss Neville. One student after another was offered the part of Hastings, but one after another pleaded some more pressing engagement. The same trouble was experienced in securing a Miss Neville. After several days of fruitless button-holing, and when the project was about to be abandoned, Mr. Stephens and Miss Campbell kindly consented to fill the breach, rather than allow the performance to fall through. Mr. Smeaton was pressed into the service as stage manager, and for eight days the little company rehearsed assiduously.

The performance took place on a Saturday evening. At ten that morning the cast were busy setting the stage. At eleven they were to have a rehearsal. At twelve the stage was still far from complete.

As scene-shifters and stage-hands the members of the cast were a brilliant failure. At one an adjournment was made for lunch. At two the setting of the stage was resumed. At three a rehearsal of a kind took place. At five, weary in body and mind, and dejected in spirits, the little company separated with doleful anticipations of the task before them in the evening. They had worked hard all day as stage-hands; they had had no dress rehearsal; their costumes (for the most part borrowed) had not even been tried on; they were by no means letter-perfect in their parts, and they had only the haziest idea of where their exits and entrances should be made.

The performance, however, not only passed off without the slightest hitch, but some of the performers gave evidence of so much histrionic ability that the next number of the Review contained a letter from a gentleman of considerable experience as a dramatic critic, suggesting the formation of a University Club for the study of classical comedies, with a view to their representation in public.

ACT III.

The project was discussed from time to time by those most interested, and the possibility of staging "She Stoops to Conquer" in its entirety was often talked of, but nothing definite was done till the following session, when Messrs. Mouat and J. S. Montgomery took the matter up *con amore*. With great difficulty, and by dint of sheer importunity, they at length succeeded in enlisting the support of the small number of graduates and students required to fill the cast. A meeting was then held at the University, and the Club was formally constituted, Mr. A. R. Barclay being appointed business manager, and Mr. Solomon stage manager.

The performance took place in the Princess Theatre on June 12th and 13th, 1891, before crowded houses, the cast being filled as follows:—

Hardcastle	Mr. C. M. Mouat	Thomas	Mr. Stevens
Sir Charles Marlow	Mr. W. D. Milne	Roger	Mr. Adams
Young Marlow	Mr. J. R. MacDonald	Mrs. Hardcastle	Miss Freeman
Hastings	Dr. Jeffcoat	Miss Hardcastle	Miss Alexander
Tony Lumpkin	Mr. J. S. Montgomery	Miss Neville	Miss Fodor
Diggory	Mr. F. H. Campbell	Maid	Miss White
Landlord	Mr. Haydon		

The stage was handsomely furnished, the costumes were elaborate and appropriate, the performers were letter-perfect, the great scenes were successfully rendered and enthusiastically received, and the whole play went with such ease and finish that those of the audience who went to scoff remained to applaud. For the smoothness and precision that marked this representation and contributed so much to its success, the performers were in a large measure indebted to the untiring efforts of the stage manager, Mr. Solomon, whose dramatic experience and keen criticism were of invaluable assistance.

ACT IV.

The production of "She Stoops to Conquer" having been received with so much favour by the press and the public, there was, in the following session, no want of interest in the Club, and no lack of members ready and anxious to face the footlights. The Club was already looked upon as one of "Our Institutions," and one of which the University had reason to be proud. Consequently when it was announced that the play selected for 1892 was that old-time favourite, "The Rivals," a feeling of interest was kindled amongst the playgoing public hardly less keen than that felt by those more closely connected with University life.

The performance took place on Saturday and Monday, June 25th and 27th, with the following cast:—

Sir Anthony Absolute	Mr. C. M. Mouat	Coachman	Mr. W. Haydon
Captain Absolute	Mr. J. B. MacDonald	Fag	Mr. Alloo
Bob Acres	Mr. F. H. Campbell	Mrs. Malaprop	Miss Freeman
Sir Lucius O'Trigger	Mr. W. J. Strong	Julia	Miss Alexander
Faulkland	Mr. F. W. Platts	Lydia Languish	Miss Fodor
David	Mr. S. Maxwell	Lucy	Miss Montgomery

In this appearance another undoubted success was scored, but what the Club may consider its greatest triumph was yet to come. The football and tennis teams were to journey north in July to exhibit their prowess in the annual athletic tournament against Canterbury College. A brilliant and daring idea occurred to the Dramatic Club, or was suggested to them—an idea that was at first only whispered with bated breath from one to another, but which speedily found such favour, both within and without the Club, that all doubts and difficulties were swept aside, and the Club resolved to send the full cast to Christchurch, there to produce "She Stoops to Conquer" and "The Rivals."

The Canterbury College students were communicated with, and the hope was expressed by the Otago men that the Northern College, which had in previous years staged several standard plays, including "The Rivals," would return the visit in the following year, and give a performance before a Dunedin audience. The proposal was warmly taken up by the College, and our Dramatic Club was assured of a hearty welcome. Needless to say, the promise of a hearty welcome was more than fulfilled. Nothing could have exceeded the kindness and hospitality extended to the large contingent from Otago, and that week in Christchurch will long be remembered and talked of, by those Otago students who were fortunate enough to participate in it, as a red-letter week in their lives.

On the 14th and 15th of July the Club faced audiences little smaller than they had been accustomed to in Dunedin, and certainly more enthusiastic. The production of "She Stoops to Conquer" was greatly applauded, and the press criticisms next day were, if somewhat guarded, more than favourable. But on the second night, the swing and "go" which characterized the representation of "The Rivals" was a revelation even to the performers themselves, and must be attributed largely to the appreciative nature of the audience. The principals in the cast had evidently established themselves as favourites, for they were recognised and heartily greeted as they came on. The result was that, from first to last, those behind the footlights were *en rapport* with those in front. On the stage there was a complete absence of anything approaching constraint or stiffness, and the performance was marked by a freedom of movement that had never been attained before. In the auditorium all restraint was swept away, and the laughter and applause was at times so loud and long as to interrupt the course of the play. At the end of the third and each succeeding act, professors, lecturers, and others, came behind the scenes, and enthusiastically congratulated the performers. The Press, too, next morning, entirely abandoned the slight tone of caution observable about its first criticisms, and was unqualified in its approbation.

By those students who have witnessed every performance given by the Club, the representation of "The Rivals" in Christchurch is generally admitted to be the best work that the Club has yet done.

ACT V.

The annual performance of the University Dramatic Club being now looked forward to with as much certainty as the University Ball or the Capping Ceremony, the Club in the present year (1893) deliberated long and anxiously over its choice of a play. Finally, it decided, not without serious misgivings, upon attempting "The School for Scandal." That the popularity of the Club is not on the wane was shown by the large audiences that filled the theatre on August 18th and 19th, when the play was produced with the following cast:—

Sir Peter Teazle	Mr. C. M. Mouat	Careless	Mr. F. H. Campbell
Charles Surface	Mr. J. R. MacDonald	Trip	Mr. Alfred Alloo
Joseph Surface	Mr. C. Mandl	Sir Toby	Mr. Orkney
Sir Oliver Surface	Mr. A. R. Barclay	Joseph's Valet	Mr. F. J. Mouat
Bowley	Mr. Jas. Montgomery	Gentlemen, companions of Charles	Mr. N. Williams Mr. W. Cran
Sir Benjamin Backbite	Mr. E. C. Cutten		
Crabtree	Mr. A. H. Adams	Lady Teazle	Miss Alexander
Moses	Mr. Jas. Wales	Lady Sneerwell	Mrs. M. Ross
Snake	Mr. Alfred Alloo	Mrs. Candour	Mrs. Rennie
Sir Harry Bumper	Mr. W. J. Strong	Maria	Miss Montgomery

In producing this brilliant comedy the Club, perhaps, undertook a task somewhat beyond its powers. Be this as it may, it is certain that, on the second night at least, the performance was quite up to the high standard hitherto maintained by the Club. The Club has now presented, with no small measure of success, the three most famous of the eighteenth century comedies, and it is probable that, with the performance of "The School for Scandal," the curtain has been rung down, for a time at least, upon the production of the classical comedy, as far as the University is concerned.

The members of the University Dramatic Club may now fairly turn their attention to modern comedy with the certainty that, in attempting the delineation of the lives and characters of men and women in modern dress, they have a prospect of even greater success than they have already achieved in depicting the manners and customs, the emotions and sentiments, of ladies and gentlemen in powder and patches.

The Otago University Football Club.

The origin of University football can be traced as far back as 1883, when one or two University students belonged to the second fifteens of the various local clubs, and one medical student (Dr. Allan) gained his interprovincial cap. At the end of the season, Dr. Christie and Mr. R. McNab arranged a match with the Pirates Club, and the latter won by three goals and three tries to *nil.*

At the beginning of 1884, a general meeting of the students was held in Dr. Black's room, Mr. W. D. Milne occupying the chair. It was then decided to form a football club, the colours to be chocolate and white jersey and stockings and black knickerbockers. The subscription was fixed at 2s 6d, and the following office-bearers were elected:—President, G. S. Sale, Esq., M.A.; Vice-President, W. Brown, Esq., M.D.; Captain, W. D. Milne; Hon. Secretary and Treasurer, R. McNab; Committee: F. B. Allen, R. Gilkison, W. Fitzgerald, H. McIntyre, L. Barnett, and J. H. Chapman.

An unsuccessful effort was made by the Committee to secure the Museum Reserve, which was at that time vacant. The Club then numbered about thirty playing members.

On May 24th, the first match was played against the Union Second, the latter winning by two tries to one. The 'Times,' in reporting the match, says: "Considerable comment was caused by the fact that McIntyre played for the University against his own club." The constitution of the team caused a great deal of discussion in the papers, and it was found that matches could not be arranged for the Club on its existing basis. During the year, a great effort was made to send a team to play Canterbury College; but, after everything was settled, two of the University players backed out, and the match fell through.

The records for the season 1885 are very scanty. Mr. V. H. M. McLymont was secretary, Mr. R. McNab deputy-captain, and Messrs. F. B. Allen, Prof. Brown, R. McNab, H. McIntyre, and J. R. Montgomery formed the committee, the other officers of the Club being the same as in 1884. No record of the matches, if any were played, exists.

In 1886, however, we come to something definite in connection with the Club. Professor Sale was re-elected President, and has since continuously held that office. The Vice-President was Professor Mainwaring Brown. Mr. Milne captained the Club, an office which he held until the end of 1888, when he retired from active service, and Mr. R. McNab was again deputy-captain. Mr. F. B. Allen was elected secretary and treasurer. Only three matches were played during the season—two against all-comers, on the Union ground, one of which was lost and the other won, and the third against Canterbury College, in Christchurch. This match is now a matter of history, and all University students will remember how their team was beaten on the post, when, having two tries to the good and the game well in hand, they allowed their opponents to score at the corner flag, and Bean kicked a wonderful goal. The University team for this year was as follows:—F. B. Allen, J. Bee, W. Fitzgerald, J. Fitzgerald, H. McIntyre, J. McLaughlin, W. D. Milne (captain), R. McNab, J. R. Montgomery, G. A. Simmers, J. Stevens, J. C. Smith, J. Tennant, and J. Torrance. In a foot-note to the list of Club matches we read:—"The Club improved considerably last season, owing to the regular practice obtained on Wednesday afternoons on the Union ground, where some ten scratch matches were played.

The year 1887 shows a still further development in University football. In that year, the Club for the first time put a second fifteen into the field, and the interest consequently greatly increased. In this year, Dr. Scott and Professor Brown were elected Vice-Presidents, and Mr. F. B. Allen secretary, the other offices being filled as before. The First Fifteen played 12 matches, winning 3, losing 6, and drawing 3, the wins being against the Pirates, High School, and Canterbury College, the latter match being played at Tahuna Park, which was at the time under water. The team in 1887 comprised F. B. Allen, W. Butement, W. Eliott, R. H. Hogg, J. V. Lovegrove, S. Neave, E. Fooks, J. Gibb, L. E. Hardy, J. F. Menzies, W. D. Milne, G. A. Simmers, J. C. Smith, J. S. Tennant, and J. Torrance.

The Second Fifteen played 6 matches, losing 5 and winning 1, that against the Taieri Second.

In this year the Club secured the use of Tahuna Park, and also changed its colours to the now-existing royal blue.

The following report is appended to the record of the Club:—"During the past season the Club, for the first time in its short history, played regular matches as a senior club. The possession of a ground, though somewhat distant from Dunedin, caused a very marked improvement in the play of the members."

In 1888 the following new office-bearers were elected:—Deputy-captain, Mr. J. C. Smith; and Hon. Sec., Mr. R. H. Hogg.

The First Fifteen had a particularly good season, and their record has never been equalled by any subsequent teams. They played

11 matches, winning 7, losing 3, and drawing 1, wins being scored against the Alhambra, High School, Taieri, Montecillo, Pirates, Zingari-Richmond, and Union Clubs.

The annual inter-college match resulted in a draw, each side scoring one goal. The 1888 team consisted of R. F. Cook, R. B. Huxtable, D. J. Le Cren, H. E. Murray, J. S. Reid, J. B. Thomson, C. Cantrell, E. E. Fooks, J. F. Menzies, W. D. Milne (captain), P. G. Morgan, T. D. Pearce, A. S. M. Polson, J. C. Smith, and J. Torrance.

The Second Fifteen also came out of the fire with a very good record, as, out of ten matches played, they won 5, lost 4, drew 1, their wins being against the High School Second, Taieri Second, Pirates Second, Montecillo Second, and Zingari-Richmond Second.

The report says:—"The experience of the past season has been the realization of the hopes entertained at its commencement. Both Fifteens have now won the majority of their matches, the play throughout the season being most consistent, and the Club lays claim to one Otago and South Island representative (J. B. Thomson)."

During this year it was resolved by the College and University Clubs—"That no man shall play in the annual match between Otago University and Canterbury College in 1888 unless he possesses the double qualification—*(a)* That he is a graduate, undergraduate, or is in actual attendance at lectures. *(b)* That he is a playing member of his club." This rule has been tacitly adhered to in all subsequent matches between the two colleges.

In 1889 Mr. Milne, having so long been at the head of University football, and having decided to retire from the field, was elected a Vice-president of the Club, Dr. Scott being his colleague. Both gentlemen have filled that office until the present time. Mr. R. F. Cook was elected captain, Mr. J. Torrance deputy-captain, and Mr. A. Polson hon. secretary and treasurer. How different from 1888 is the record for 1889! Matches played 11, won 2, lost 8, drawn 1. This great change is hard to account for, unless it be that about this time the town clubs went in for more systematic training, and consequently the University Club, being noted for its inattention to that important adjunct to football, was left in the back ground.

In 1889 the following represented the Club:—R. F. Cook (captain), J. McIlroy, A. McIlroy, W. Mendelson, J. F. Menzies, N. Paterson, J. S. Reid, F. H. Campbell, F. Fitchett, P. Fitzgerald, G. Makgill, T. D. Pearce, A. S. M. Polson, G. A. Simmers, J. Torrance, and J. Watt.

The Second Fifteen did much better than the First, as, out of 7 matches played, they won 4, lost 2, and drew 1, their wins being against the Alhambra (twice), Pirates, and Dunedin.

The report appended to the record says:—"The past season was disastrous to the Otago University Football Club. The University, unfortunately, counts among its members a great many individuals who appear to thrive on their plenteous endowment of apathy. These gentlemen do not play, systematic training is a consummation devoutly to be wished, but quite out of the question, seeing that spare moments in an active student's life are so few and far between. With these and other troubles in the way, last season was one continuous struggle for those who had the Club's best interests at heart, and who did more than their fair share of work to keep matters straight."

In October, 1889, at a general meeting of the Club, Mr. Frank H. Campbell was elected hon. secretary and treasurer, and he has held that office up to the present time.

In 1890 the following new officers were elected:—Captain, Mr. J. R. Montgomery; Deputy-captain, Mr. R. F. Cook.

The season of 1890 was even more disastrous, if possible, than that of 1889, for, out of 11 matches played, only 1 was won (that against the Taieri), while 9 were lost and 1 drawn. The team, however, is to be complimented for the gallant stand it made against Canterbury College, and those who took part in that match will readily admit that it was the hardest game they ever played. The College were exceptionally strong, while the University had a very weak team, but by sheer pluck they kept their opponents out all the first spell, and in the second spell they fought so hard that it was not until near the end that the College scored a goal and a try, the latter being given owing to a misunderstanding about the touch-line.

The following represented the Club in 1890:—W. Anderson, A. G. Bell, R. F. Cook, W. Mendelson, J. F. Menzies, A. McIlroy, P. Andrew, F. H. Campbell, F. Fitchett, D. Greig, J. R. Montgomery, M. W. Ross, T. D. Pearce, J. Torrance, J. Watt, and J. Rutherford.

The Second Fifteen's record was slightly better than that of the First. They played 7 matches, winning 1, losing 4, and drawing 2.

The appended report says:—"We have always to make the same complaint of University students playing with other clubs, but what we more regret is that a few footballers (?) do their utmost to take away to their own clubs players on whom they have really no claim. The Second Fifteen, owing to various causes, did not work well together, and it is to be hoped that players will this year bury all petty jealousies, and do their utmost to further the interests of the Club."

At the beginning of this year the ladies of the University presented the Football Club with a beautiful banner, which the Club, though striving hard, has seldom been able lately to carry to victory; but as its intentions are always good, it is hoped that the tide of fortune will yet turn in the Club's favour.

In 1891 the Club greatly increased its number of vice-presidents, the following being elected:—Drs. Barnett, Black, Fooks, Jeffcoat, Parker, Roberts, Salmond, Scott, Shand, Professors Gibbons and Gilray, and Messrs Spencer and Milne. Mr. J. R. Montgomery was again captain, while Mr. J. Torrance was elected deputy-captain. Yet another year in which the Club, out of 8 games played, won only 1 and drew 1, the win being, strangely enough, against the Taieri, and the draw with the Zingari-Richmond, as in 1890.

The annual College match was lost by 1 goal and 1 try to 2 tries, but everybody who saw the match now knows that the University scored a try underneath the posts just on time, but the referee, not being able to see it, gave it a maul, and Hislop was easily carried back by the "burly" Thacker, who afterwards admitted that it was a fair try. This would have made the score equal, and it is almost certain a goal would have been kicked.

The team in 1891 was as follows:—G. Ahern, A. Crawford, W. Mendelson, G. Mitchell, J. Rutherford, J. Torrance, P. Andrew, F. H. Campbell, P. Fitzgerald, W. Hislop, J. R. Montgomery, P. G. Morgan, T. D. Pearce, M. W. Ross, and J. Watt.

The Second Fifteen's record was little better, as out of 9 matches they won 2 and lost 7.

The appended report says:—"Lack of interest and want of training were chiefly responsible for the ill success of the Club, and it is high time that members should devote at least a small portion of their time to training, for only then can the Club hope to win matches. Last year many students were again conspicuous by their lack of *esprit de corps* in playing for other clubs. We are happy to say that this most undesirable state of affairs has been almost wholly removed, owing to the firm action of the Students' Association, to which the sincere thanks of the Club are due." Too much importance cannot be attached to this last sentence. The Students' Association, though not going too far in the matter, have always expressed strong disapproval of such action, and we trust they will always support the Football Club in this way.

In the year 1892, the names of Dr. W. Brown and Mr. R. F. Cook were added to the number of vice-presidents. Mr. A. Crawford was deputy-captain for part of the year, and after his resignation Mr. M. W. Ross was appointed in his place.

The record for 1892 shows a great improvement on that of 1891, for, out of 11 matches played, 4 were won and 7 lost, the wins being against the Taieri, Dunedin, Pirates, and Canterbury College. The team may take to its credit that this is the only year, since the inauguration of the Club, in which the Dunedin Club was defeated by the University. The College match was again productive of great excitement, for, the College having scored 10 points in the first ten minutes, everybody thought the University's chance of success was *nil*; but the first spell ended with the score 10—6, and in the second the Blues soon topped their opponents' score, eventually winning by 15 points to 10. The following represented the Club in this year:—C. F. Collins, W. Haydon, P. Marshall, G. Mitchell, J. Porteous, J. Rutherford, A. Alloo, F. H. Campbell, W. Hislop, J. R. Montgomery, P. Morgan, T. D. Pearce, F. W. Platts, M. W. Ross, and W. J. Strong.

The Second Fifteen also showed a far better record than for many years past, and scored 80 points against their opponents' 17. They played six matches, winning 4 and losing 2; their wins being against the Zingari-Richmond, Dunedin, and Taieri Seconds, and the Ravensbourne Club.

The appended report says:—"The past season was far more successful in every respect than almost any of the previous ones. Far more attention was paid to training, and more interest was shown in the work of the Club, with the result that a much better record was shown."

During this year the committee tried the expedient of taking a hall once a week for training purposes, and although the venture was not a financial success, it certainly improved University football.

In 1898, Mr. J. R. Montgomery was elected a vice-president, as a token of the Club's appreciation of his services, and Dr. Hogg replaced Mr. R. F. Cook. Mr. F. W. Platts was elected captain, and Mr. M. W. Ross deputy-captain.

The interest in University football seems lately to be decidedly on the wane, for neither can enough students be induced to play the game, nor does the general body of students support the Club in any shape or form. Certainly a few enthusiastic supporters are to be found at every match, but very few, and to many students it would be a matter of small moment if the Club ceased to exist. We trust that, for the honour of University football, the students will in future give the Club that support which is so beneficial to the players and so much needed to make the Club successful. It is true that to ensure success there must be the unity amongst the players themselves, but if the main body of the students took more interest in the Club's welfare, some few of the players would attach more importance than they do to the honour of the University, and not be led away from their duty by petty grievances.

The annual match against Canterbury College again afforded great excitement. For five minutes before time the College had scored 4 points to their opponent's *nil*, the Blues playing a very inferior game, when suddenly the latter woke up and quickly scored a goal and 2 tries, thus winning by 9 points to 4.

The following represented the Club:—J. Neil, C. Snow, W. Cran, W. McKay, C. Collins, Melhuish, Allen, F. H. Campbell, C. Cullen, I. Hunter, J. R. Montgomery, J. S. Montgomery, F. W. Platts (captain), M. W. Ross, and J. Simmers.

The difficulty in University football is that almost the same thirty players have to be depended on every Saturday, and if a few of them are unable to play, great trouble is found in replacing them. Therefore it should be a very pressing cause which keeps any player away from football on a Saturday.

Notwithstanding the fact that the University Club has never in the course of its career, with the exception of perhaps the year 1888, occupied a very prominent position among the senior clubs in Otago, there can be no question that the Club has done incalculable good towards fostering that University spirit which is, year by year, becoming more prominent amongst the students. From its inauguration in 1884, the Club has continued its progress with varying success, and when we consider all the drawbacks to University football, the Club may fairly be complimented on its career. The first and foremost drawback is that the Club can never hope to retain its players for any length of time, and, again, the opportunities for training are very few and far between. These are only two of the numerous disadvantages the Club necessarily labours under, and yet the claim can unhesitatingly be made that the Club has always played the game in the friendly spirit which is so necessary to the success of Rugby football.

The Otago University Lawn Tennis Club.

The Lawn Tennis Club has now been in existence about nine years. It was in the year 1884 that the Council received a petition, dated September 10th, and signed by seventy-one students, praying that a lawn tennis court might be added to the provision already made for athletics within the grounds. The Council acceded to this request by giving a grant for the building of an asphalt court. With a good court in their possession it was not long before those students who played tennis formed themselves into a club, which in 1885 was already in full swing under the management of Mr. R. V. Fulton (now Dr. Fulton) as secretary. In 1886 the game became so popular among the students that the management of the Club judged it time that a second court should be laid down for the accommodation of players. To raise the required funds it was decided to hand round subscription sheets to the members of the Council (in their private capacity), to the professors and lecturers, and to the students. This was done with such satisfactory results that it was judged expedient to get a handsome new court laid down, which was ready for use in the session of 1887. The making of this court, partly owing to the fact that a great amount of rock had first to be cleared away, proved very expensive, the whole cost of the new court, together with repairs to the old, being almost £80. In consequence of this the finances of the Club fell into a very unsatisfactory condition. To remedy this calls were again made on the students' pockets, and the annual subscription was raised from 2s 6d to 5s; and from this time the state of the finances improved so steadily that in 1891 the subscription was reduced to its former amount.

In 1890 the Club was deprived of one of the courts owing to the site being required for the erection of the School of Mines. Two years later the University Council, to recoup the Club for the loss thus sustained, donated £50 towards the formation of another court. As, however, the Council and the Club are not agreed as to the position of the new court, no steps have as yet been taken for its laying down.

The Lawn Tennis Club has always been one of the most successful of the University institutions. It has all along played matches against outside clubs, and has never failed to give a good account of itself; in fact, it has proved itself to be one of the leading clubs in Otago. The most formidable antagonist among the clubs of the province which the University has to meet is the Otago Club, against which it has now played 6 matches, having lost 4 and won 2, though neither defeats nor victories have ever been crushing. In 1887 an annual match with Canterbury College was inaugurated, and during every session since (save once when the weather would not permit) a match has been played between the sister colleges. Out of the 6 matches played the University has won 3, lost 2, and drawn 1. Of 42 matches played altogether against outside clubs, the University has won 26, lost 14, and drawn 2—a result of which none can be ashamed.

CAXTON PRINTING COMPANY, MANSE STREET, DUNEDIN.

AV

University of Otago.

CELEBRATION

OF THE

Completion

of the

Twenty-First Year

of

University Work.

APRIL 8th, 1893.

PRINTED AT THE OTAGO DAILY TIMES OFFICE, HIGH STREET.

University of Otago.

CELEBRATION OF THE COMPLETION OF THE TWENTY
FIRST YEAR OF UNIVERSITY WORK.
APRIL 8th, 1893.

Programme of Arrangements.

Afternoon, 3 to 5.

SPEECHES IN THE LIBRARY.

1. "Sketch of the Founding of the University."

   The Chancellor, REV. DR. STUART, D.D.

2. "The Growth of the University, and the work done during the past Twenty-one Years."

   DR. SHAND, M.A, LL.D.

3. "On the probable Future Development of the University."

   THE HONOURABLE SIR ROBT. STOUT.

4. "University Education in England."

   PROFESSOR G. S. SALE, M.A.

5. "University Education in other parts of New Zealand."

   DR. FITCHETT.

During the afternoon the Grounds and Buildings will be open to the Public.

Evening, 8 to 8.30.

MAIN BUILDING.

In the Library.—Musical Selections by the Students (see separate programme).

Professorial Board Room.—Curios and Typewriting Machines.

Council Room.—Microscopes.

Ladies' Room.—General Curios, Old Documents, &c., &c.

Physics Lecture Room and Laboratory.—Exhibition of Electrical Apparatus and Instruments of Precision.

MEDICAL SCHOOL.

Medical Museum, Physiological Laboratory, and Apparatus.

Chemical Laboratory and Museum.

SCHOOL OF MINES.

The Processes of Assaying and Treating Ores in the Laboratory will be demonstrated.

The Director and Staff will show the collection of Mining Models and Specimens in the Mining Museum, and the Assaying Appliances.

8.30 to 9.

Musical Selections, Recitations, &c., in the Chemistry Class Room.

Refreshments in the Physics Laboratory.

9 to 9.30.

Music in the Library.

9.30 to 10.

Music in Chemistry Class Room.

Concert.

The following Ladies and Gentlemen have kindly consented to assist:—

RECITATIONS AND READINGS.

Misses Freeman and Alexander.

Dr. Jeffcoat and Mr. J. R. Macdonald.

SONGS.

Misses Alexander and Cooper.

Messrs. Joel, Manson, Hunter, Melville, Ridley, Palmer, Strong, Don, Walker, Platts, Montgomery. and Slight.

PIANO AND VIOLIN SOLOS.

Misses Cameron and Schlotel.

Messrs. Taylor and Coombs.

Detailed Programmes will be Distributed during the Evening.

TO COMMENCE AT EIGHT O'CLOCK.

No. 3

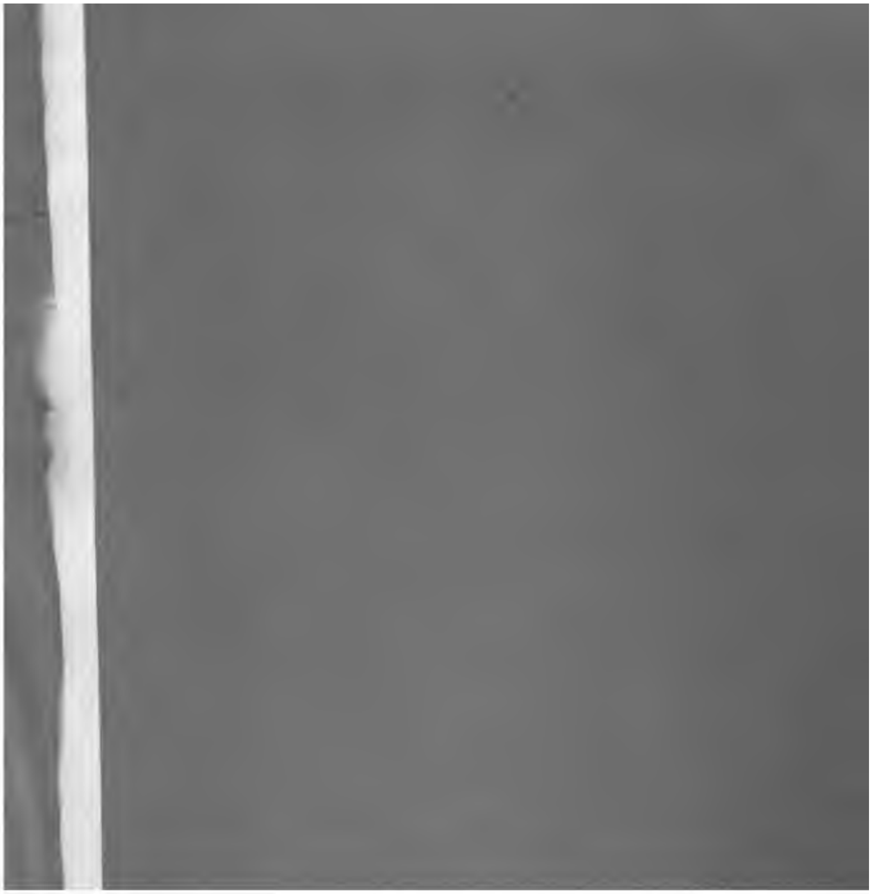
STANDING ORDERS

OF THE

SENATE

OF THE

NEW ZEALAND UNIVERSITY.



STANDING ORDERS

OF THE

Senate of the New Zealand University.

Powers of Chairman.

1. All things hereinafter directed to be done by the Chancellor may be done by the Vice-Chancellor, or Chairman, in the absence of the Chancellor.

Quorum.

2. The Chancellor shall take the Chair at the hour appointed, and if after the expiration of half an hour a quorum (five) shall not be present, the Chancellor shall adjourn the meeting to a future day to be named by him.

3. If it shall appear, on notice being taken, or on the report of a division, that a quorum be not present, the Chancellor shall declare the meeting at an end.

4. In such case, the business under discussion, and any other business not disposed of, shall be inserted in the Notice Paper for the next meeting, and shall take precedence of all other notices of motion.

Minutes.

5. Every Vote and Proceeding of the Senate shall be noted by the Registrar of the University, or person acting in that capacity.

6. The draft Votes and Proceedings thus noted shall be read at the close of each meeting, and certified by the Chancellor.

7. At the commencement of each meeting the Votes and Proceedings of the preceding meeting shall be read for confirmation.

Motions and Amendments.

8. No member shall make any motion initiating a subject for discussion, except in pursuance of notice duly inserted on the Notice Paper for that meeting.

9. When a motion has been made and seconded, the question shall then be proposed to the Senate by the Chancellor.

10. Any motion not seconded shall not be further discussed, and no further entry thereof shall be made on the Votes and Proceedings.

11. After a motion has been proposed, it shall be deemed to be in possession of the Senate, and it shall not be withdrawn without leave, such leave being granted without any negative voice.

12. A question may be superseded—

(1.) By the motion "That the Senate do now adjourn."

(2.) By a motion "That the Senate proceed to the next business."

(3.) By the previous question—viz., "That the question be now put"—being proposed and negatived.

13. If the previous question be resolved in the affirmative, the original question shall be put forthwith without further amendment or debate.

14. A motion for "proceeding to the next business," and also for "the previous question," may be superseded by the adjournment of the Senate.

15. The debate upon a question may be interrupted.

1. By a question of order.
2. By a motion for reading any official document relevant to the question.

16. The Senate may order a complicated question to be divided.

17. A question being put shall be resolved in the affirmative or in the negative by the majority of the voices, "Aye" or "No."

18. The Chancellor shall state whether, in his opinion, the "Ayes" or the "Noes" have it; and, unless a division be called for, the Chancellor's decision shall be final.

19. No question or amendment shall be proposed which is the same in substance as any question which, during the same Session, has been resolved in the affirmative or the negative.

20. Any member proposing an amendment shall deliver the same in writing to the Chancellor.

21. A question having been proposed may be amended by leaving out certain words in order to insert or add other words, or by inserting or adding words.

22. When a proposed amendment is to leave out certain words, the Chancellor shall put the question: "That the words

proposed to be left out stand part of the question," which shall be resolved by the Senate in the affirmative or the negative, as the case may be.

23. When the proposed amendment is to leave out certain words in order to insert or add other words, the Chancellor shall put the question, "That the words proposed to be left out stand part of the question;" which, if resolved in the affirmative, will dispose of the amendment; but if in the negative, and there is no motion before the Senate for amending the proposed amendment, another question shall be put: "That the words of the amendment be inserted or added instead thereof," which shall be resolved in the affirmative or the negative, as the case may be.

24. When the proposed amendment is to add or insert certain words, the Chancellor shall put the question: "That such words be inserted or added," which shall be resolved in the affirmative or the negative, as the case may be.

25. No amendment shall be proposed in any part of a question after a later part has been amended, or after an amendment on a later part has been proposed, unless the proposed amendment has by leave of the Senate been withdrawn.

26. No amendment shall be proposed in any words which the Senate has resolved shall stand part of the question, except by way of addition.

27. Amendments may be proposed to a proposed amendment, as if such proposed amendment were an original question.

28. When amendments have been made, the main question as amended shall be put.

29. When amendments have been proposed, but not made, the question shall be put as originally proposed.

30. A proposal to alter a Statute, or a section of a Statute, shall be made in the form of a Bill, which shall pass through the course of procedure adopted with respect to Bills in the General Assembly; but the principle involved in such alteration may be affirmed by a resolution of the Senate, which resolution shall be deemed to be equivalent to a second reading of the Bill, and the resolution as passed shall be referred to a Select Committee to prepare a Bill thereon; and the Bill shall then be considered in Committee of the whole Senate, and be laid upon the table during at least one whole sitting day prior to being passed.

ORDER OF SPEAKING.

31. Every member desiring to speak shall rise in his place and address himself to the Chancellor.

32. While the Senate is dividing, members can speak only to a point of order, and by permission of the Chancellor.

33. No member may speak to any question after the same has been put by the Chancellor, and the voices have been given in the affirmative and negative thereon.

34. When two or more members rise to speak, the Chancellor shall call upon the member who first rose in his place.

35. A member may speak to any question before the Senate, or upon any amendment proposed thereto, or upon a question or amendment to be proposed by himself, or upon a question of order arising out of a debate, but not otherwise.

36. No member may speak twice to a question before the Senate, except in explanation or reply.

37. A member who has spoken to a question may again be heard to explain himself in regard to some material part of his speech, but shall not introduce any new matter.

38. A reply shall be allowed to a member who has made a substantive motion to the Senate, but not to any member who has moved an amendment.

39. Any member may rise to speak "to order."

40. Whenever the Chancellor rises during a debate, any member then speaking or offering to speak shall sit down, and the Senate shall be silent, so that the Chancellor may be heard without interruption.

DIVISIONS.

41. Every member present when a division is taken must vote.

42. If a division be demanded, the Chancellor shall call upon each member present to say "Aye" or "No."

43. An entry of the list of divisions in the Senate shall be made by the Registrar or person acting in that capacity, in the Votes and Proceedings.

COMMITTEE OF THE WHOLE.

44. The Senate may, on motion agreed to, resolve itself into Committee of the Whole.

45. In Committee of the Whole, the rules concerning the seconding of motions, and the restriction of speaking, shall not apply.

MISCELLANEOUS.

46. Any standing order may be suspended by unanimous leave of the Senate.

47. In all questions of order, not hereinbefore provided for, the Chancellor shall decide.

14
1892

14
1892
UNIVERSITY

THE

EDUCATION ACTS

OF

NEW ZEALAND,

TOGETHER WITH

REGULATIONS MADE THEREUNDER.

No. 4

WELLINGTON:
BY AUTHORITY: GEORGE DIDSBURY, GOVERNMENT PRINTER.
1892.

CONTENTS.

Page
"The Education Act, 1877" .. 1
"The Education Districts Act, 1882" .. 32
"The Education Act 1877 Amendment Act, 1885" .. 34
"The Wellington and Wanganui Education Districts Act, 1886" .. 35
"The Westland and Grey Education Boards Act, 1888" .. 35
"The School Committees Election Act, 1891" .. 41

Regulations—

I. Attendance Registers and Returns .. 48
II. Payments to Boards .. 50
III. Audit of Accounts .. 51
IV. Inspection of Schools and Standards of Examination .. 52
V. School-books .. 71
VI. Teachers' Certificates .. 73
VII. Pupil-teachers .. 79
VIII. Normal Schools .. 81
IX. Scholarships .. 82
X. District High School Fees .. 82

University of Otago.

CELEBRATION OF THE COMPLETION OF THE TWENTY-FIRST YEAR OF UNIVERSITY WORK.
APRIL 8th, 1893.

Programme of Arrangements.

Afternoon, 3 to 5.

SPEECHES IN THE LIBRARY.

1. "Sketch of the Founding of the University."

The Chancellor, REV. DR. STUART, D.D.

2. "The Growth of the University, and the work done during the past Twenty-one Years."

DR. SHAND, M.A, LL.D.

3. "On the probable Future Development of the University."

THE HONOURABLE SIR ROBT. STOUT.

4. "University Education in England."

PROFESSOR G. S. SALE, M.A.

5. "University Education in other parts of New Zealand."

DR. FITCHETT.

During the afternoon the Grounds and Buildings will be open to the Public.

"THE EDUCATION ACT, 1877."

Title.
Preamble.
1. Short Title.
2. Commencement of Act.
3. Repeal of Acts and Ordinances.
4. Interpretation.
5. Division of Act.

PART I.

DEPARTMENT OF EDUCATION.

6. Minister of Education.
7. Secretary and Inspector and officers of Department of Education.
8. Expenses of administering department to be appropriated by General Assembly.
9. Act not to interfere with "Neglected and Criminal Children Act, 1867."
10. Act not to be binding on Maoris.
11. Provision for Sundays and holidays.

PART II.

EDUCATION BOARDS.

(1.) *Education Districts.*

12. Education districts.

(2.) *Constitution of Boards.*

13. Education Board.
14. When members of Board take office.
15. Annual retirement of three members of Board.
16. Ordinary election to fill vacancies.
17. Existing Boards to be first Boards under this Act.
18. First elections may be postponed.
19. Existing Boards to administer Act in altered districts till elections held.
20. Qualification for members of Board.
21. Disqualification of members.
22. Provision for vacancy in Board.
23. Acts of Board not to be questioned for informality, &c.
24. Boards incorporated.

(3). *Property of Boards.*

25. Property acquired under repealed Acts or Ordinances to vest in Boards constituted by this Act. Provision in respect of new districts.
26. Moneys payable to former Boards to be paid to new Boards.
27. Debts due to or owing by former Boards to be paid by or recovered from new Board.
28. Contracts entered into under repealed Acts or Ordinances, by whom to be performed.
29. Provision for apportioning debts and liabilities between old and new Boards.

(4.) *Secretary and Officers of Boards.*

30. Boards may appoint Secretary and other officers.
31. Duties of Secretary.

(5.) *Meetings of Boards.*

32. First and other meetings of Boards.
33. Quorum of Boards. Chairman to be elected.
34. Minutes to be kept.

(6.) *Powers and Duties of Boards.*

35. General powers and duties of Boards.
36. Provision when school districts divided. School year.
37. Public notice to be given when school district formed.
38. Trustees of school may agree to place same under control of Board.

(7.) *Board Fund.*

39. Board to make annual estimate of moneys required for current year.
40. Provision for deduction from grants-in-aid in certain cases.
41. Funds of Boards.
42. Board Fund, of what to consist.
43. Disposal of Fund.
44. Accounts to be kept. Accounts to be audited.

(8.) *Appointment of Teachers.*

45. Appointment and removal of teachers.

46. Teachers of schools in office to continue in same.
47. Duration of appointment of school-teacher. Summary dismissal in certain cases.
48. Teacher's occupation of schoolhouse.
49. Proceedings against a teacher refusing to give up schoolhouse on demand.
50. Pupil-teachers may be employed.

(9.) *Scholarships, District High Schools.*

51. Board may establish scholarships.
52. Board may receive land or money for foundation of scholarships.
53. Who may compete for scholarship.
54. Board may make regulations for scholarships.
55. District high schools may be established by Board.
56. Course of instruction in high schools.
57. School-libraries may be established.

PART III.

SCHOOL DISTRICTS. SCHOOL COMMITTEES AND THEIR DUTIES.

(1.) *School Districts.*

58. School Committees.
59. Disqualification for membership of Committee.
60. Provision for constitution of new school districts.
61. Meeting of householders.
62. School districts in existence under repealed Acts or Ordinances to continue such.

(2.) *Election of School Committees.*

* * * * *

(3.) *Meetings of School Committees.*

69. First meeting of School Committee. Election of Chairman.
70. Proceedings at meetings.
71. Clerk and Treasurer may be appointed. Not to receive remuneration in certain cases.
72. Minutes of meetings, &c.
73. Committee may appear by Clerk, or Chairman, or Solicitor.

(4.) *Powers and Duties of School Committees.*

74. Committee may establish public schools. Committee to have management of educational matters in school district.
75. Committee may provide schoolhouses, &c.
76. May appoint teachers of sewing.
77. Board may acquire sites for schoolhouses, &c.
78. Savings-banks may be established.

(5.) *Good-attendance Certificates.*

79. Certificates of attendance obtainable.

(6.) *School Fund.*

80. Of what School Fund to consist.
81. Application of section 41 to School Fund.
82. Audit of Committee's accounts. Copy to be sent to the Board.

PART IV.

PUBLIC SCHOOLS, AND MANAGEMENT THEREOF.

(1.) *Course of Instruction in Public Schools.*

83. "School-age" defined.
84. Public schools to be conducted in accordance with regulations. Course of instruction in public schools.
85. Military drill and physical training in certain schools. Playgrounds.
86. Evening schools.
87. Expulsion of children in certain cases.
88. Itinerant teachers may be appointed. Aided schools.

(2.) *Compulsory Education: Exemptions.*

89. Every child above seven nor more than thirteen to attend school.
90. Exemptions.
91. In case child does not attend school, notice may be given.
92. Proceedings to compel attendance.

(3.) *Penalties in certain cases.*

93. Penalty for non-compliance with order of Justices.
94. Proceedings to be taken under "Justices of the Peace Act, 1866."
95. Compulsory clauses, when shall be enforced.
96. Penalty for wilful disturbance of school.

(4.) *Inspection of Schools.*

97. Inspection of schools.
98. Private schools may be inspected on request of managers.
99. Governor may order inspection of industrial schools, &c.

(5.) *Regulations and Reports.*

100. Regulations may be made by Order in Council.
101. Minister to make annual report.
102. Boards to make annual report.
103. Committee to forward yearly report to Board.
104. School lands and buildings exempt from rates.

Schedules.

AN ACT to make further Provision for the Education of the People of New Zealand.

Title.

[*29th November*, 1877.]

WHEREAS it is expedient to make further and better provision for the education of the people in the Colony of New Zealand:

Preamble.

Be it therefore enacted by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:—

1. The Short Title of this Act shall be "The Education Act, 1877."

Short Titl

2. This Act shall come into operation on the first day of January, one thousand eight hundred and seventy-eight, except as to the appointment of the Minister, the Secretary to the Department of Education, the Inspectors of Schools, and other officers, and the making of regulations and orders, and the provisions of sections seventeen and eighteen, for which purposes only this Act shall come into force on the passing hereof.

Commence of Act.

3. Upon the coming into operation of this Act the Acts and Ordinances specified in the First Schedule hereto shall be and the same are hereby repealed.

Repeal of and Ordin

4. In the interpretation of this Act, and except where there is something in the context repugnant thereto or inconsistent therewith, the following words and expressions shall mean or include the matters following:—

Interpretat

"Minister" means the Minister of Education appointed for the purposes of this Act:

"Inspector" means any person appointed to be an Inspector of Schools under this Act:

"Board" means the Education Board of any district constituted under this Act:

"District" means an education district constituted under this Act:

"School district" means a district under the jurisdiction of a School Committee:

"Committee" means the School Committee elected for a school district:

"Property" means real and personal property of every description:

"Teacher" means any schoolmaster or schoolmistress, or assistant schoolmaster or schoolmistress, or other person engaged in teaching in any public school, except pupil-teachers:

Expenses of administeri department appropriate General Assembly.

8. All moneys required for the administration of this Act by the department shall be defrayed out of moneys to be from time to time appropriated by the General Assembly for the following purposes:—

(1.) In payment of salaries and other expenses of the Department of Education.

(2.) In payment to the Board of every district of a sum of three pounds fifteen shillings for each child in average daily attendance at a public school, such average daily attendance to be computed in manner prescribed by regulations.

(3.) For the establishment and maintenance of normal or training schools, and in grants to Boards for the maintenance of such schools already established and under their control.

(4.) For the erection of schoolhouses, and for any other purpose for which such moneys may be applied or appropriated.

Subject to any such appropriation, regulations may be made prescribing the times and manner at and in which such moneys shall be paid or applied.

Act not to interfere w “ Neglecte Criminal Children A 1867.”

9. Nothing in this Act shall be construed to interfere with or affect the provisions of “The Neglected and Criminal Children Act, 1867,” or any Act amending the same, nor with any industrial or reformatory school established or which may be established under any Act or Ordinance.

Act not to binding on Maoris.

10. Nothing in this Act shall be binding on any Maori; but any Maori shall be at liberty to send his children to a public school under this Act, subject to the regulations for the time being in force in such school.

> The word “Maori” shall include every person of the aboriginal race of New Zealand and every person one of whose parents was a native of such race: But no half-caste shall be deemed to be a Maori within the interpretation of this Act unless he shall be living as a member of some Native tribe or community.

Provision f Sundays a holidays.

11. When the day on which anything is by this Act required to be done falls on a Sunday, Good Friday, Christmas Day, New Year's Day, or any proclaimed or customary public holiday, then such thing shall be done on the day following.

9. When a motion has been made and seconded, the question shall then be proposed to the Senate by the Chancellor.

10. Any motion not seconded shall not be further discussed, and no further entry thereof shall be made on the Votes and Proceedings.

11. After a motion has been proposed, it shall be deemed to be in possession of the Senate, and it shall not be withdrawn without leave, such leave being granted without any negative voice.

12. A question may be superseded—

(1.) By the motion "That the Senate do now adjourn."

(2.) By a motion "That the Senate proceed to the next business."

(3.) By the previous question—viz., "That the question be now put"—being proposed and negatived.

13. If the previous question be resolved in the affirmative, the original question shall be put forthwith without further amendment or debate.

14. A motion for "proceeding to the next business," and also for "the previous question," may be superseded by the adjournment of the Senate.

15. The debate upon a question may be interrupted.

1. By a question of order.
2. By a motion for reading any official document relevant to the question.

16. The Senate may order a complicated question to be divided.

17. A question being put shall be resolved in the affirmative or in the negative by the majority of the voices, "Aye" or "No."

18. The Chancellor shall state whether, in his opinion, the "Ayes" or the "Noes" have it; and, unless a division be called for, the Chancellor's decision shall be final.

19. No question or amendment shall be proposed which is the same in substance as any question which, during the same Session, has been resolved in the affirmative or the negative.

20. Any member proposing an amendment shall deliver the same in writing to the Chancellor.

21. A question having been proposed may be amended by leaving out certain words in order to insert or add other words, or by inserting or adding words.

22. When a proposed amendment is to leave out certain words, the Chancellor shall put the question: "That the words what persons, so nominated, have the greatest number of votes; and the nine persons who have the greatest number of votes shall be the members of the Board.

(4.) After it has been ascertained what candidates have by an absolute majority of votes been duly elected, if it shall appear that there is an equality of votes for one or more candidates remaining to complete the list of nine members, the Board shall decide which of such persons shall be the member or members.

(5.) If a Committee refuses or neglects to transmit to the Board either of the lists of names hereinbefore required to be transmitted, within the time appointed, the Board shall proceed to the election of members notwithstanding such refusal or neglect.

(6.) Every election shall be conducted publicly by the Board in such manner as it thinks fit.

(7.) The Board shall publicly notify what persons have been found to be elected, and such notification shall be signed by the Chairman of the Board, and shall be final and conclusive for all purposes.

A copy of such notification, signed by the Chairman, shall be transmitted to the Minister without delay.

(8.) In the event of nine persons not being nominated as herein provided, the Board shall elect such a number of duly-qualified persons as may be necessary to complete the number of the Board.

When member of Board take office.

14. The members of the Board so elected shall take office on the thirty-first day of March, one thousand eight hundred and seventy-eight.

Annual retirement of three members of Board.

15. On the thirty-first day of March, one thousand eight hundred and seventy-nine, and on the same day and month in every year thereafter, one-third of the members then in office shall retire.

The members to retire in the year one thousand eight hundred and seventy-nine shall be determined by each Board by ballot not later than the thirty-first day of December immediately preceding.

In the year one thousand eight hundred and eighty, three out of the six original members shall retire, and the members so retiring shall also be determined by ballot not later than the day aforesaid.

And in every subsequent year the members shall retire wh have served longest upon such Board without re-election.

All retiring members shall be eligible for re-election.

rdinary elec-ion to fill acancies.

16. In the month of March, one thousand eight hundred an seventy-nine, and in the same months in every succeeding yea an election shall be held for the purpose of filling the vacancie caused by the retirement of members as herein provided.

Except as respects the number of persons to be elected, al the proceedings in and about such election shall be had an taken in the same manner as prescribed in section thirteen upo the first election of Boards.

xisting Boards o be first Boards nder this Act.

17. Notwithstanding anything contained in "The Educatio Boards Act, 1876," every Education Board constituted there under shall continue in office till the first Boards are electe under this Act; and each such first-mentioned Board shall b the Board under this Act for the district for which such Boar shall have been constituted accordingly.

Every act required to be done by any such Board, or by th Chairman thereof, under this Act, may respectively be done an performed by each such Board and Chairman as if it or he ha been elected or appointed under this Act.

In case any vacancy shall occur in any Board, or in the offic of Chairman thereof, before the coming into office of the ne Board constituted under this Act, the Governor may appoin some person to be a member of the Board or Chairman thereo as the case may require.

First elections may be postponed.

18. The Governor may, by Order in Council, postpone, for period not exceeding two months, all or any first elections o School Committees or Education Boards under this Act, and al proceedings incident to any such election postponed as aforesai shall be respectively postponed for the same period. In case o any such postponement the members of the Board shall tak office on such day as shall be fixed by the Governor in Council.

Existing Boards to administer Act in altered districts till elections held.

19. Where the limits of districts as existing immediatel before the coming into operation of this Act have been altere by this Act, the Board of the district which immediately befor the coming into operation of this Act comprised such altere limits shall, until the election of a Board for such new district administer this Act in all respects as if such limits had no been altered.

Where a new district has been constituted, all the proceeding in and about the first election of a Board for such new distric shall be had and taken in the manner hereinbefore provided by the Board of the district of which such new district originally formed part, or, if the Governor in Council thinks fit so to order, by any other Board which can more conveniently conduct such election.

Qualificati for membe Board.

20. Every person, male or female, of the full age of twenty-one years, and not disqualified as mentioned in the next section, resident in the education district, shall be qualified to be a member of the Board.

Disqualific of member

21. If any member shall, by writing under his hand addressed to the Chairman of the Board, resign his office, or shall die, or become of unsound mind, or be adjudicated a bankrupt, or execute any deed of composition or arrangement with his creditors, or be absent without leave from the meetings of the Board for three consecutive months, or be convicted of treason, felony, perjury, or any infamous crime, he shall immediately cease to be a member of the Board.

If any member shall receive any salary from the Board, or accept or hold any office or employment from or under the Board to which any salary, fees, or emoluments are attached, or shall be or become interested or concerned (except as a member of a registered or incorporated company) in any contract under which any money is to be paid by the Board, he shall immediately thereupon cease to be a member of the Board: Provided that it shall be lawful for the Board to pay any member residing at a distance from the ordinary place of meeting of the Board reasonable travelling-expenses.

Provision f vacancy in Board.

22. If the place of any member of the Board shall become vacant for any of the causes aforesaid, such vacancy shall be deemed to be an extraordinary vacancy.

The Chairman of the Board shall fix a day on or before which the Committees of the several school districts shall each transmit the name of a person qualified to fill such vacancy, and shall publicly notify the names so transmitted, and appoint a day on which each Committee shall send in the name of a person so notified, and a day on which the election shall be held.

All the proceedings in and about such election shall be conducted in the same manner as in the case of ordinary elections.

The member then elected shall retain his office so long as the vacating member would have retained the same if no such vacancy had occurred.

ots of Board ot to be ques- oned for in- rmality, &c.

23. No act of the Board shall be questioned on the ground o any informality in the election of a member, nor on the groun that the seat of any member is vacant, or that any suppose member thereof is incapable of being a member.

oards ncorporated.

24. Each Board shall be a body corporate under the name o "The Education Board of the District of [*naming it*]," and b such name shall have perpetual succession and a common sea and may take and hold land for the purposes of this Act, an may do and suffer all such acts and things as bodies corporat may do and suffer.

(3.) *Property of Boards.*

roperty cquired under epealed Acts or rdinances to est in Boards onstituted by his Act.

25. All real and personal property immediately before th coming into operation of this Act vested in, belonging to, or unde the control of the Education Board of any district constituted b any Act or Ordinance hereby repealed or otherwise, for education purposes, shall, on the coming into operation of this Act, b vested in the Education Board of such district constituted unde this Act, to be held by it for the purposes of this Act withi such district.

Provision in espect of new listricts.

Where a new district is constituted under this Act, all suc property within or held in trust for educational purposes for suc new district which was formerly vested in the Board of th original district shall, upon the thirty-first day of March next vest in the Board of the new district.

Where the limits of a district as existing immediately befor the coming into operation of this Act have been altered hereby all such property within such altered limits shall, on the thirty first day of March, vest in the Board of the district where suc property is situate. Nothing in this section contained sha extend or apply to reserves for educational purposes which by o under any law or authority have been set apart as endowment for educational purposes in any district, but all such endowment shall in any of the cases hereinbefore provided for be dealt wit in the manner provided by "The Education Reserves Act, 1877."

Moneys payable o former Boards o be paid to ew Boards.

26. All persons who immediately before the coming int operation of this Act owe or are liable or compellable to pay an money to the Education Board of any district constituted unde any Act or Ordinance hereby repealed, or to any other person o behalf of such Education Board, shall immediately on the comin into operation of this Act be deemed to owe and shall be liabl and compellable to pay the same to the Education Board of suc district constituted under this Act.

27. All moneys which, by reason of any contract entered into under the provisions of any Act or Ordinance hereby repealed at or immediately before the coming into operation of this Act, were due or owing by or recoverable from the Education Board of any district constituted under any Act repealed hereby, or by any other person on behalf of such Board, shall on the coming into operation of this Act be paid by or be recoverable from the Education Board of such district constituted under this Act.

Debts du
owing by
Boards to
paid by o
recovered
new Boar

28. All contracts, agreements, and securities before the coming into operation of this Act entered into or made under any Act or Ordinance hereby repealed, with or in favour of or by the Education Board of any district constituted by any such Act, or with or in favour of or by the Superintendent of the province formerly comprising such district, and which immediately before the coming into operation of this Act were in force, shall at the coming into operation of this Act take effect and be proceeded on and enforced as near as circumstances will admit in favour of, by and against, and with reference to the Board of such district constituted under this Act.

Contracts
entered i
under rep
Acts or O
nances, b
to be perf

29. Where a new district has been constituted by this Act, or where the limits of a district as existing immediately before the passing of this Act have been altered hereby, the Boards of the respective districts may agree what moneys, debts and liabilities, contracts and securities, or what proportions thereof, shall belong and attach to each such Board; and if they cannot so agree before the first day of May next, the Minister shall, upon the application of either of such Boards, make an inquiry into the circumstances, and make an award as to the several matters mentioned in this and the last two preceding sections.

Every award of the Minister made in respect of any one or more of such matters shall be final and conclusive on the several Boards interested therein.

Provision
apportion
debts and
bilities be
old and n
Boards.

(4.) *Secretary and Officers of Boards.*

30. Every Board may from time to time appoint and remove a Secretary and Inspectors and such other officers as may be thought necessary, who shall receive such salary as the Board shall deem proper.

Boards m
point Sec
and other
officers.

Any person who at the time of the coming into operation of this Act holds office under an Education Board in any district under the provisions of any Act hereby

If the Chairman shall be absent from any meeting the members present shall elect one of their number to preside in his stead at such meeting, and such presiding member shall have the same power at such meeting as the Chairman.

If the Chairman shall from any cause cease to be a member of the Board, or resign the office of Chairman, the Board shall as soon thereafter as conveniently may be elect another member of the Board to be Chairman in his stead.

Minutes to be kept.

34. Minutes of the proceedings of every Board shall be regularly entered in a book to be kept for that purpose, and at every meeting of the Board the minutes of the preceding meeting shall be read over and signed by the Chairman of the meeting at which the same shall be read, and the minutes when so signed shall for all purposes be held to be a true statement and record of the proceedings of the Board.

(6.) *Powers and Duties of Boards.*

General po and duties Boards.

35. Subject to the provisions of this Act, the Board of each district shall establish and maintain public schools within the district, whether such schools have already been established under the provisions of any Ordinance or Act hereby repealed or shall be established by the Board under the provisions of this Act; shall promote the establishment of school districts within such district, and define the limits thereof, with power to alter such limits as the Board shall see fit, and to divide any such school district into two or more school districts or parts of districts, or to combine two or more school districts or parts of such districts into one; shall appoint and remove officers and teachers in the manner provided by this Act; may establish scholarships, school-libraries, and district high schools; shall raise the moneys required to be raised for the purposes of this Act, and administer the funds granted by the Education Department, and all other funds which may become the property of the Board; and generally shall have and exercise all the duties and functions imposed by this Act.

Provision school dist divided.

36. When any school district shall be divided into two or more such districts, or two or more such districts or parts of districts shall be combined into one district, then every such division of a school district and every such combination shall for the purpose of this Act be deemed a new school district, and the

46. Teachers of schools in office to continue in same.
47. Duration of appointment of schoolteacher. Summary dismissal in certain cases.
48. Teacher's occupation of schoolhouse.
49. Proceedings against a teacher refusing to give up schoolhouse on demand.
50. Pupil-teachers may be employed.

(9.) *Scholarships, District High Schools.*

51. Board may establish scholarships.
52. Board may receive land or money for foundation of scholarships.
53. Who may compete for scholarship.
54. Board may make regulations for scholarships.
55. District high schools may be established by Board.
56. Course of instruction in high schools.
57. School-libraries may be established.

PART III.

SCHOOL DISTRICTS. SCHOOL COMMITTEES AND THEIR DUTIES.

(1.) *School Districts.*

58. School Committees.
59. Disqualification for membership of Committee.
60. Provision for constitution of new school districts.
61. Meeting of householders.
62. School districts in existence under repealed Acts or Ordinances to continue such.

(2.) *Election of School Committees.*

* * * * *

(3.) *Meetings of School Committees.*

69. First meeting of School Committee. Election of Chairman.
70. Proceedings at meetings.
71. Clerk and Treasurer may be appointed. Not to receive remuneration in certain cases.
72. Minutes of meetings, &c.
73. Committee may appear by Clerk, or Chairman, or Solicitor.

(4.) *Powers and Duties of School Committees.*

74. Committee may establish public schools. Committee to have management of educational matters in school district.
75. Committee may provide schoolhouses, &c.
76. May appoint teachers of sewing.
77. Board may acquire sites for schoolhouses, &c.
78. Savings-banks may be established.

(5.) *Good-attendance Certificates.*

79. Certificates of attendance obtainable.

(6.) *School Fund.*

80. Of what School Fund to consist.
81. Application of section 41 to School Fund.
82. Audit of Committee's accounts. Copy to be sent to the Board.

PART IV.

PUBLIC SCHOOLS, AND MANAGEMENT THEREOF.

(1.) *Course of Instruction in Public Schools.*

83. "School-age" defined.
84. Public schools to be conducted in accordance with regulations. Course of instruction in public schools.
85. Military drill and physical training in certain schools. Playgrounds.
86. Evening schools.
87. Expulsion of children in certain cases.
88. Itinerant teachers may be appointed. Aided schools.

(2.) *Compulsory Education: Exemptions.*

89. Every child above seven nor more than thirteen to attend school.
90. Exemptions.
91. In case child does not attend school, notice may be given.
92. Proceedings to compel attendance.

(3.) *Penalties in certain cases.*

93. Penalty for non-compliance with order of Justices.
94. Proceedings to be taken under "Justices of the Peace Act, 1866."
95. Compulsory clauses, when shall be enforced.
96. Penalty for wilful disturbance of school.

(4.) *Inspection of Schools.*

97. Inspection of schools.
98. Private schools may be inspected on request of managers.
99. Governor may order inspection of industrial schools, &c.

(5.) *Regulations and Reports.*

100. Regulations may be made by Order in Council.
101. Minister to make annual report.
102. Boards to make annual report.
103. Committee to forward yearly report to Board.
104. School lands and buildings exempt from rates.

Schedules.

(1.) From moneys payable by Government in respect of the average daily attendance of children as hereinbefore provided :

(2.) From moneys in any manner whatever received or to be received by the Board.

The Board shall regulate its expenditure upon the basis of the estimate so made, and a copy thereof shall be transmitted to the Minister.

Provision f deduction f grants-in-a certain cas

40. Whenever the Board of any district shall be in receipt of rents or other profits derived from lands or other property vested in the School Commissioners under "The Education Reserves Act, 1887," an account shall be taken at such periods as the Minister may direct, showing the amount of such rents or other profits ; and, in computing the proportionate share which such Board would, under the provisions of this Act, be entitled to receive from the Government, allowance shall be made for such rents and profits, and such share shall be paid subject to a deduction based upon the net amount of such rents or other profits.

No such deduction shall be made in respect of moneys received from such special endowments as are mentioned in section fifty-two of this Act.

Funds of B

41. All moneys received by or belonging to the Board shall be paid into such bank as the Board from time to time appoints, to an account to be called "The Education Board Account," and no moneys shall be drawn out of the bank except by authority of the Board, and shall be paid by cheque, signed by the Treasurer and by such one or more members of the Board as the Board may from time to time authorise to sign cheques.

Board Fun what to co

42. The Board Fund shall consist of the following moneys, that is to say :—

(1.) Grants from the Consolidated Fund.

(2.) Rents and profits derived from property or endowments vested in the Board.

(3.) Special endowments or grants for particular purposes.

(4.) Special fees for higher education.

(5.) Any other moneys which the Board may receive from donations, subscriptions, or otherwise.

Disposal of

43. Every Board shall, out of the Board Fund, make such provision from time to time as it shall seem fit for the following, namely :—

(1.) For the payment of salaries and other expenses connected with the carrying-on of the business of such Board ;

"Public school" means any school established or constituted under the provisions of this Act, subject to the control and management of the Board:

"Householder"*

"Schoolhouse" includes the schoolmaster's residence and land attached thereto, outbuildings, and apparatus and appliances for instruction in gymnastics and physical training:

"*Gazette*" means the *New Zealand Gazette*, and "gazetted" means published in such *Gazette*:

"Public notice" or "publicly notified" means that a notice shall be published in some newspaper circulating in the district:

"Regulations" mean regulations made under this Act:

"Outlying district" means a district not included within the jurisdiction of a Road Board or Borough Council.

Division of Act.

5. The provisions of this Act are divided into Parts relating to the following subject-matters:—

PART I.—Department of Education.
PART II.—Education Boards.
PART III.—School Districts. School Committees and their Duties.
PART IV.—Public Schools and Management thereof.

PART I.

DEPARTMENT OF EDUCATION.

Minister of Education.

6. The Governor may from time to time appoint any Minister of the Crown to be Minister of Education.

The Minister shall have the control and direction of the Department of Education, as constituted under Part I. of this Act, and the officers of that department, and, subject to the provisions hereinafter contained, shall generally administer this Act.

Secretary and Inspector and officers of Department of Education.

7. The Governor may from time to time appoint and remove a Secretary to the Department of Education, and such Inspector of Schools, clerks, and other officers as may be deemed necessary.

---

* For definition of "householder," see section 2 of "The School Committees Election Act, 1891."

Certificates of competency will be issued to teachers after examination held in such manner as may be prescribed by regulations to be made as hereinafter provided :

Provided that the Committee may recommend teachers to the Board for appointment, and may also recommend the suspension or dismissal of any such teacher; but no appointment, suspension, or dismissal shall take place until the Committee have been first consulted.

Teachers of schools in c to continue same.

46. All teachers at schools at or immediately before the coming into operation of this Act holding office under the provisions of any Ordinance or Act hereby repealed shall, subject to any express provision of this Act, continue to hold such office as if this Act had not come into operation.

Duration of appointmen school-teac

47. No school-teacher appointed, or whose appointment is confirmed, under this Act shall be at liberty to relinquish his said engagement without giving to the Chairman of the Committee, and also to the Secretary of the Board under which he holds his appointment, at least one month's notice in writing of his intention to do so; and such engagement shall not be determined by any Board except on giving three months' notice, signed by its Secretary.

Summary dismissal i certain cas

Nothing contained in this Act shall preclude or prevent the Committee from suspending, and the Board from peremptorily dismissing, any school-teacher for immoral conduct or gross misbehaviour.

Teacher's occupation schoolhous

48. The teacher's occupation of the schoolhouse and land attached thereto, or teacher's house, if one be provided, is hereby declared to be an occupancy by sufferance only.

Proceeding against a te refusing to up schoolh on demand

49. In case a teacher shall refuse or neglect to deliver up possession of the schoolhouse and land attached, or of the house, as the case may be, after demand in writing made by or on behalf of the Board, the Resident Magistrate whose Court shall be nearest to the locality shall, on the application of the Board, issue a warrant to the Bailiff of the Court, commanding him to enter into the premises and give possession of the same to the Board.

Every such warrant may and shall be enforced as a warrant issued under the nineteenth section of "The Resident Magistrates Act, 1867;" and the ninety-first, ninety-second, and ninety-third sections of that Act shall apply to warrants issued under the foregoing provisions.

PART II.

EDUCATION BOARDS.

(1.) *Education Districts.*

Education districts.

12. The divisions of the colony described in the Second Schedule hereto shall be and are hereby constituted education districts for the purposes of this Act, and shall be called by the names set over each such description.

Where the boundaries of any county comprised in an education district shall be altered under "The Counties Act, 1876," such alteration shall operate with respect to any district constituted under this Act, and shall take effect accordingly.

The Governor may, by Proclamation in the *Gazette*, and on the request of the Board, bring any of the counties mentioned in the Second Schedule of "The Counties Act, 1876," or any part thereof, under the operation of this Act, and create the same part of an education district.

(2.) *Constitution of Boards.*

Education Board.

13. There shall be for every district an Education Board, consisting of nine members, constituted as hereinafter provided:—

(1.) Between the first and the thirty-first days of January, one thousand eight hundred and seventy-eight, each of the Committees in each district shall transmit to the Board the names of two persons qualified to be members of the Board, their written consent being first obtained, and the Board shall thereupon publicly notify the names of such persons, and in such notice shall also state the day on which the election of the Board shall be held, and shall also transmit to each Committee the names of such persons.

The day of election shall be some day not later than the fifteenth of March.

(2.) On or before the last day of February in the same year, the Committee in each district shall send to the Secretary of the Board a list in writing, setting forth the full names of not more than nine of the persons whose names have been publicly notified as aforesaid.

(3.) The Secretary shall carefully keep all such lists, and on the day fixed by the Board shall proceed to ascertain

Debts due owing by Boards to paid by or recovered new Boar

27. All moneys which, by reason of any contract entered into under the provisions of any Act or Ordinance hereby repealed at or immediately before the coming into operation of this Act, were due or owing by or recoverable from the Education Board of any district constituted under any Act repealed hereby, or by any other person on behalf of such Board, shall on the coming into operation of this Act be paid by or be recoverable from the Education Board of such district constituted under this Act.

Contracts entered in under rep Acts or O nances, by to be perf

28. All contracts, agreements, and securities before the coming into operation of this Act entered into or made under any Act or Ordinance hereby repealed, with or in favour of or by the Education Board of any district constituted by any such Act, or with or in favour of or by the Superintendent of the province formerly comprising such district, and which immediately before the coming into operation of this Act were in force, shall at the coming into operation of this Act take effect and be proceeded on and enforced as near as circumstances will admit in favour of, by and against, and with reference to the Board of such district constituted under this Act.

Provision apportioni debts and bilities be old and ne Boards.

29. Where a new district has been constituted by this Act, or where the limits of a district as existing immediately before the passing of this Act have been altered hereby, the Boards of the respective districts may agree what moneys, debts and liabilities, contracts and securities, or what proportions thereof, shall belong and attach to each such Board; and if they cannot so agree before the first day of May next, the Minister shall, upon the application of either of such Boards, make an inquiry into the circumstances, and make an award as to the several matters mentioned in this and the last two preceding sections.

Every award of the Minister made in respect of any one or more of such matters shall be final and conclusive on the several Boards interested therein.

(4.) *Secretary and Officers of Boards.*

Boards ma point Secr and other officers.

30. Every Board may from time to time appoint and remove a Secretary and Inspectors and such other officers as may be thought necessary, who shall receive such salary as the Board shall deem proper.

Any person who at the time of the coming into operation of this Act holds office under an Education Board in any district under the provisions of any Act hereby

And in every subsequent year the members shall retire who have served longest upon such Board without re-election.

All retiring members shall be eligible for re-election.

Ordinary election to fill vacancies.

16. In the month of March, one thousand eight hundred and seventy-nine, and in the same months in every succeeding year, an election shall be held for the purpose of filling the vacancies caused by the retirement of members as herein provided.

Except as respects the number of persons to be elected, all the proceedings in and about such election shall be had and taken in the same manner as prescribed in section thirteen upon the first election of Boards.

Existing Boards to be first Boards under this Act.

17. Notwithstanding anything contained in "The Education Boards Act, 1876," every Education Board constituted thereunder shall continue in office till the first Boards are elected under this Act; and each such first-mentioned Board shall be the Board under this Act for the district for which such Board shall have been constituted accordingly.

Every act required to be done by any such Board, or by the Chairman thereof, under this Act, may respectively be done and performed by each such Board and Chairman as if it or he had been elected or appointed under this Act.

In case any vacancy shall occur in any Board, or in the office of Chairman thereof, before the coming into office of the new Board constituted under this Act, the Governor may appoint some person to be a member of the Board or Chairman thereof, as the case may require.

First elections may be postponed.

18. The Governor may, by Order in Council, postpone, for a period not exceeding two months, all or any first elections of School Committees or Education Boards under this Act, and all proceedings incident to any such election postponed as aforesaid shall be respectively postponed for the same period. In case of any such postponement the members of the Board shall take office on such day as shall be fixed by the Governor in Council.

Existing Boards to administer Act in altered districts till elections held.

19. Where the limits of districts as existing immediately before the coming into operation of this Act have been altered by this Act, the Board of the district which immediately before the coming into operation of this Act comprised such altered limits shall, until the election of a Board for such new district, administer this Act in all respects as if such limits had not been altered.

Where a new district has been constituted, all the proceedings in and about the first election of a Board for such new district

If the Chairman shall be absent from any meeting the members present shall elect one of their number to preside in his stead at such meeting, and such presiding member shall have the same power at such meeting as the Chairman.

If the Chairman shall from any cause cease to be a member of the Board, or resign the office of Chairman, the Board shall as soon thereafter as conveniently may be elect another member of the Board to be Chairman in his stead.

Minutes t be kept.

34. Minutes of the proceedings of every Board shall be regularly entered in a book to be kept for that purpose, and at every meeting of the Board the minutes of the preceding meeting shall be read over and signed by the Chairman of the meeting at which the same shall be read, and the minutes when so signed shall for all purposes be held to be a true statement and record of the proceedings of the Board.

(6.) *Powers and Duties of Boards.*

General p and dutie Boards.

35. Subject to the provisions of this Act, the Board of each district shall establish and maintain public schools within the district, whether such schools have already been established under the provisions of any Ordinance or Act hereby repealed or shall be established by the Board under the provisions of this Act; shall promote the establishment of school districts within such district, and define the limits thereof, with power to alter such limits as the Board shall see fit, and to divide any such school district into two or more school districts or parts of districts, or to combine two or more school districts or parts of such districts into one; shall appoint and remove officers and teachers in the manner provided by this Act; may establish scholarships, school-libraries, and district high schools; shall raise the moneys required to be raised for the purposes of this Act, and administer the funds granted by the Education Department, and all other funds which may become the property of the Board; and generally shall have and exercise all the duties and functions imposed by this Act.

Provision school dis divided.

36. When any school district shall be divided into two or more such districts, or two or more such districts or parts of districts shall be combined into one district, then every such division of a school district and every such combination shall for the purpose of this Act be deemed a new school district, and the

Acts of Board not to be questioned for informality, &c.

23. No act of the Board shall be questioned on the ground of any informality in the election of a member, nor on the ground that the seat of any member is vacant, or that any supposed member thereof is incapable of being a member.

Boards incorporated.

24. Each Board shall be a body corporate under the name of "The Education Board of the District of [*naming it*]," and by such name shall have perpetual succession and a common seal, and may take and hold land for the purposes of this Act, and may do and suffer all such acts and things as bodies corporate may do and suffer.

(3.) *Property of Boards.*

Property acquired under repealed Acts or Ordinances to vest in Boards constituted by this Act.

25. All real and personal property immediately before the coming into operation of this Act vested in, belonging to, or under the control of the Education Board of any district constituted by any Act or Ordinance hereby repealed or otherwise, for educational purposes, shall, on the coming into operation of this Act, be vested in the Education Board of such district constituted under this Act, to be held by it for the purposes of this Act within such district.

Provision in respect of new districts.

Where a new district is constituted under this Act, all such property within or held in trust for educational purposes for such new district which was formerly vested in the Board of the original district shall, upon the thirty-first day of March next, vest in the Board of the new district.

Where the limits of a district as existing immediately before the coming into operation of this Act have been altered hereby, all such property within such altered limits shall, on the thirty-first day of March, vest in the Board of the district where such property is situate. Nothing in this section contained shall extend or apply to reserves for educational purposes which by or under any law or authority have been set apart as endowments for educational purposes in any district, but all such endowments shall in any of the cases hereinbefore provided for be dealt with in the manner provided by "The Education Reserves Act, 1877."

Moneys payable to former Boards to be paid to new Boards.

26. All persons who immediately before the coming into operation of this Act owe or are liable or compellable to pay any money to the Education Board of any district constituted under any Act or Ordinance hereby repealed, or to any other person on behalf of such Education Board, shall immediately on the coming into operation of this Act be deemed to owe and shall be liable and compellable to pay the same to the Education Board of such district constituted under this Act.

(1.) From moneys payable by Government in respect of the average daily attendance of children as hereinbefore provided:

(2.) From moneys in any manner whatever received or to be received by the Board.

The Board shall regulate its expenditure upon the basis of the estimate so made, and a copy thereof shall be transmitted to the Minister.

Provision
deduction
grants-in-
certain ca

40. Whenever the Board of any district shall be in receipt of rents or other profits derived from lands or other property vested in the School Commissioners under "The Education Reserves Act, 1887," an account shall be taken at such periods as the Minister may direct, showing the amount of such rents or other profits; and, in computing the proportionate share which such Board would, under the provisions of this Act, be entitled to receive from the Government, allowance shall be made for such rents and profits, and such share shall be paid subject to a deduction based upon the net amount of such rents or other profits.

No such deduction shall be made in respect of moneys received from such special endowments as are mentioned in section fifty-two of this Act.

Funds of

41. All moneys received by or belonging to the Board shall be paid into such bank as the Board from time to time appoints, to an account to be called "The Education Board Account," and no moneys shall be drawn out of the bank except by authority of the Board, and shall be paid by cheque, signed by the Treasurer and by such one or more members of the Board as the Board may from time to time authorise to sign cheques.

Board Fu
what to co

42. The Board Fund shall consist of the following moneys, that is to say:—

(1.) Grants from the Consolidated Fund.

(2.) Rents and profits derived from property or endowments vested in the Board.

(3.) Special endowments or grants for particular purposes.

(4.) Special fees for higher education.

(5.) Any other moneys which the Board may receive from donations, subscriptions, or otherwise.

Disposal o

43. Every Board shall, out of the Board Fund, make such provision from time to time as it shall seem fit for the following, namely:—

(1.) For the payment of salaries and other expenses connected with the carrying-on of the business of such Board;

repealed or otherwise shall, subject to removal as aforesaid and to any express provision of this Act, continue to hold such office.

Duties of Secretary.

31. The Secretary to each Board shall attend all meetings of such Board, take minutes of its proceedings, and enter such minutes in a book to be provided for that purpose, and conduct the correspondence of the Board, and take charge of and preserve all letters, papers, and documents relating to the business of the Board, and perform all such duties as may be required by the Board for carrying out the provisions of this Act.

He shall also prepare under direction of the Board all reports, returns, and information relating to school matters which may be asked for by the Minister.

(5.) *Meetings of Boards.*

First and other meetings of Boards.

32. The first meeting of each Board elected under the provisions of this Act shall be held at such time and place as the Minister shall appoint, and all subsequent meetings shall be held at such times and places as the Board may by any regulation in that behalf determine.

But at least one meeting shall be held in every month after such first meeting, and a quorum of the Board, having duly met, may from time to time adjourn, to meet at such other time and place as they shall appoint.

Quorum of Boards.

33. The powers given to Boards by this Act shall be exercised at meetings convened as aforesaid, at which meetings three members shall be a quorum.

Chairman to be elected.

Every Board shall at its first meeting, or as soon thereafter as conveniently may be, elect one of its number to be Chairman, and on every question before the Board the decision of the majority shall be final and conclusive. The Chairman shall have a deliberative vote, and, in case the votes shall be equal, shall also have a casting-vote.

No resolution or decision come to at any meeting of a Board shall be revoked or altered at any subsequent meeting of such Board within twelve months from the passing thereof, unless notice of the intention to propose such revocation or alteration shall have been given at a previous meeting of the Board, and shall have been made known by the circular convening the meeting addressed to each member of the Board at his usual or last-known place of abode.

Certificates of competency will be issued to teachers after examination held in such manner as may be prescribed by regulations to be made as hereinafter provided :

Provided that the Committee may recommend teachers to the Board for appointment, and may also recommend the suspension or dismissal of any such teacher; but no appointment, suspension, or dismissal shall take place until the Committee have been first consulted.

Teachers o schools in to continue same.

46. All teachers at schools at or immediately before the coming into operation of this Act holding office under the provisions of any Ordinance or Act hereby repealed shall, subject to any express provision of this Act, continue to hold such office as if this Act had not come into operation.

Duration o appointme school-teac

47. No school-teacher appointed, or whose appointment is confirmed, under this Act shall be at liberty to relinquish his said engagement without giving to the Chairman of the Committee, and also to the Secretary of the Board under which he holds his appointment, at least one month's notice in writing of his intention to do so ; and such engagement shall not be determined by any Board except on giving three months' notice, signed by its Secretary.

Summary dismissal i certain cas

Nothing contained in this Act shall preclude or prevent the Committee from suspending, and the Board from peremptorily dismissing, any school-teacher for immoral conduct or gross misbehaviour.

Teacher's occupation schoolhous

48. The teacher's occupation of the schoolhouse and land attached thereto, or teacher's house, if one be provided, is hereby declared to be an occupancy by sufferance only.

Proceeding against a t refusing to up schoolh on demand

49. In case a teacher shall refuse or neglect to deliver up possession of the schoolhouse and land attached, or of the house, as the case may be, after demand in writing made by or on behalf of the Board, the Resident Magistrate whose Court shall be nearest to the locality shall, on the application of the Board, issue a warrant to the Bailiff of the Court, commanding him to enter into the premises and give possession of the same to the Board.

Every such warrant may and shall be enforced as a warrant issued under the nineteenth section of "The Resident Magistrates Act, 1867;" and the ninety-first, ninety-second, and ninety-third sections of that Act shall apply to warrants issued under the foregoing provisions.

proceedings shall be taken in like manner as hereinafter provided for school districts originally constituted.

School year.

The formation of any new district by the division or combination of any existing school district or districts shall take effect on and after the commencement of the school year next following the date on which the formation of such new school district shall have been agreed to by a resolution of the Board.

A "school year" shall be from the first day of January to the thirty-first day of December, both days inclusive, in each year.

Public notice to be given when school district formed.

37. Whenever any new school district shall be formed by a Board pursuant to the provisions of this Act the Board shall direct a public notice of the formation of such new district and of the boundaries thereof to be published, and every school district shall be held to be bounded as described in any such notice.

Trustees of school may agree to place same under control of Board.

38. Any persons having the management and control of any school not established under any of the Acts or Ordinances repealed hereby may, with the consent of the persons in whom the school-buildings, lands, and endowments pertaining thereto are vested, and with the assent of the Governor, agree with the Board of the district in which such school is that the said school shall be subject to the management and control of the Board, and that the said buildings, lands, and endowments shall be vested in such Board instead of such persons as aforesaid.

If the Governor assent to such agreement, and a notification of such assent be gazetted, such school-buildings, lands, and endowments shall be vested in the said Board for or towards the maintenance of such school as a school under this Act, of such character or class as the Governor shall direct, but under and subject to the provisions of this Act, and the said persons shall thenceforth be freed and discharged from the trust imposed on them as trustees or governors of such school, and the buildings, lands, and endowments pertaining thereto.

(7.) *Board Fund.*

Board to make annual estimate of moneys required for current year.

39. At the first ordinary meeting of the Board in each year the Board shall make an estimate of the amount of money which it has reason to believe will be derived from the following sources:—

Every grammar school or high school at or immediately before the coming into operation of this Act under the charge of any School Committee or Education Board, by virtue of the provisions of any Provincial Ordinance or Act hereby repealed, shall, unless otherwise provided, be deemed to be a district high school under this Act.

Course of instruction high school

56. Every such district high school shall be under the charge of a headmaster, and such number of duly-qualified masters and assistants as the Board shall from time to time consider necessary.

All the branches of a liberal education, comprising Latin and Greek classics, French and other modern languages, mathematics, and such other branches of science as the advancement of the colony and the increase of the population may from time to time require, may be taught in such school. For such higher education fees shall be paid by the pupils at such rates as shall be fixed by regulations.

In every district high school instruction shall also be given in the ordinary branches of education prescribed by this Act to be given in public schools.

School-libr may be established

57. In the various school districts the Board may from time to time expend in the purchase of books, to be placed in the school-library, any sum or sums of money equal to any sum or sums of money which shall have been raised by public subscription or otherwise within such school district.

The Board shall make such provision as may seem fit for the safe custody and care of such books and for the use thereof.

The word "book" in this section shall be deemed to include all works of art, and all scientific apparatus which may be required for the purpose of illustration in lectures, and all specimens of natural history for the formation of museums.

PART III.

SCHOOL DISTRICTS. SCHOOL COMMITTEES AND DUTIES.

(1.) *School Districts.*

School Committee

58. For every school district constituted under this Act there shall be a School Committee, consisting of *

---

* Five, seven, or nine "resident householders." See "The School Committees Election Act, 1891," section 5.

(2.) For the expense of purchasing or renting school-sites, playgrounds, and buildings, or for erecting, fitting up, and improving school-buildings;

(3.) For the payment of teachers' salaries;

(4.) For the maintenance and education of pupil-teachers;

(5.) For grants to Committees for general educational purposes;

(6.) For subsidising school-libraries;

(7.) And generally for the payment of all expenses necessarily incurred by such Board, or any Committee under their supervision, in the carrying-out of any of the provisions of this Act:

Provided always that no Board shall be liable for the payment of any expenditure incurred by any Committee or teacher, unless such expenditure shall have been previously sanctioned by such Board.

Accounts to be kept.

44. The Board shall keep full and true accounts, in which shall be entered every sum received into and paid out of the Board Fund in the order of date of each such receipt and payment, including all moneys received from rents or profits derived from lands or other property vested in the Board or under its control or management.

It may be provided by regulations that Boards shall keep general and special accounts in such convenient form as may be thought fit.

Accounts to be audited.

All such accounts shall be rendered annually, or at such periods as may be prescribed by regulations, and all such accounts shall be audited by an Auditor to be appointed by the Governor.

Copies of all such accounts, when audited, shall be furnished to the Minister.

(8.) *Appointment of Teachers.*

Appointment and removal of teachers.

45. The Board of each district shall be entitled to appoint teachers for every school under its control, or to remove such teachers from one school to any other school within the district, but no person shall be eligible for appointment who does not produce a certificate of competency from the Minister of Education, and such other certificates of fitness as shall be required by any regulations that may hereafter be made under this Act.

But in case a certificated teacher cannot be obtained for any school or schools, a person not duly certificated may be temporarily appointed until a certificated teacher can be obtained.

Such Chairman shall preside at all meetings of the Committee at which he shall be present; and if such Chairman cease to be a member of the Committee he shall cease to be such Chairman.

In case the Chairman die, or by writing under his hand delivered to the Committee at any meeting thereof resign his office, or cease to be a member of the Committee, the members present at the meeting next after the occurrence of such vacancy, or at any meeting before there shall as yet have been a Chairman chosen, shall elect some one of its number to be a Chairman, and the Chairman so elected shall continue in office for the remainder of the year.

If at any meeting of the Committee the Chairman be not present one of the members present shall be elected Chairman of such meeting by the majority of the votes of the members present thereat.

Proceedings at meetings.

70. The proceedings of every Committee shall be transacted at meetings to be convened at the request of two or more of the members or by order of the Chairman thereof.

At all meetings three members shall form a quorum, and the Chairman shall have a deliberative and also a casting vote at every such meeting, and the decision of the majority shall be final and conclusive.

Clerk and Treasurer may be appointed.

71. Every Committee shall be at liberty to appoint one of its own members or other qualified person to be its Clerk and Treasurer, who shall convene all meetings of the Committee by causing at least three days' previous notice to be given to each member thereof, and shall attend such meetings of the said Committee, and take minutes of its proceedings, and do whatever may be required of him in the execution of this Act.

Not to receive remuneration i certain cases.

But no Clerk and Treasurer shall receive any remuneration for his services if he is a member of the Committee.

Minutes of meetings, &c.

72. At every meeting of a School Committee the same proceedings shall be taken with regard to the minutes of such meeting as are prescribed by section thirty-four of this Act with regard to the minutes of meetings of Boards; and no recommendation to the Board concerning the appointment, suspension, or dismissal of a teacher shall be considered unless notice in writing to the effect that such business is proposed to be transacted has been addressed to every member of the Committee three days at least before the meeting, at his usual or last-known place of abode.

Pupil-teachers may be employed.

50. The Board of any district may engage and employ any number of apprentice pupil-teachers, subject to such regulations for the examination, training, employment, and payment of such pupil-teachers as may be made from time to time.

(9.) *Scholarships, District High Schools.*

Board may establish scholarships.

51. The Board may, with the concurrence of the Minister, from time to time, out of funds made specially applicable for the purpose, establish scholarships to be competed for by the pupils attending any public school, and also scholarships open to all children of school-age, in such manner and at such times as shall be fixed by regulations to be made under this Act.

The successful competitor for any such scholarship shall receive the amount of his or her scholarship only so long as he or she shall continue his or her education at any school or educational institution under the control of the Board at which the higher branches of education are taught, but, if there be no such school or institution in the district where the holder of the scholarship resides, then at such school, subject to inspection by a Public School Inspector, as the Board may approve of.

Board may receive land or money for foundation of scholarships.

52. The Board may receive grants of land or money, to be applied towards founding scholarships or exhibitions, or for other educational purposes in connection with any public school within a district, and such land or money shall be vested in the Board for the specific purposes declared in the grant.

Who may compete for scholarship.

53. Subject to any special trust, every scholarship or exhibition in the last-preceding section mentioned shall be open to any child on the roll of such school; and, in the event of any school for which a scholarship or exhibition is founded being discontinued, the Minister may direct that the scholarship or exhibition shall attach to some other public school in the district.

Board may make regulations for scholarships.

54. The Board may make regulations under which scholarships or exhibitions founded by any private individual or society may be competed for and held at any public school within the district.

District high schools may be established by Board.

55. Any Board, on receiving an application in writing from the Committee, may, with the express sanction of the Minister previously obtained, convert any public school in the district into and establish the same as a district high school.

has been present every time the school was open, both in the morning and afternoon;

(2.) For any such child who for a like period has not been absent from such school more than five times in all.

Such certificates shall be obtainable by all children of school-age attending a public school, and be signed and issued by the Chairman of the Committee, or in such other mode as the Committee may direct.

Any child attending a public school who has been absent from such school by reason only of the observance of any fast or other day set apart for strict religious observance by the religious body of which such child is a member shall, notwithstanding such absence, be deemed to have been present as above provided. But in each such case satisfactory evidence shall be given by the parent or guardian of such child that such child was absent only for the cause above mentioned, and that the day or days of such absence was or were days strictly set apart for strict observance by the religious body of which the child is a member.

(6.) *School Fund.*

Of what S
Fund to c

80. The School Fund shall consist of—

(1.) Moneys granted out of the Board Fund;

(2.) Donations, subscriptions, and all other moneys which may be granted to the Committee for the purposes of this Act.

Applicati
section 41
School F

81. The provisions of section forty-one shall apply to the School Fund and to the money in the hands of the Committee, and, *mutatis mutandis,* shall be applied accordingly.

Audit of
Committ
accounts.

82. The accounts of the Treasurer shall be rendered to and audited as prescribed by regulations, and all moneys in hand (if any) shall be paid over by such Committee to its successors.

Copy to b
to the Bo

A copy of such accounts shall be forwarded to the Board of the district within which is the school district to which such accounts pertain, as soon as conveniently may be after the same have been audited, together with the Auditor's report thereon.

PART IV.

PUBLIC SCHOOLS, AND MANAGEMENT THEREOF.

(1.) *Course of Instruction in Public Schools.*

" School-
defined.

83. No child above school-age shall be admitted at any public school without the special leave of the Committee, unless such school is a district high school.

Disqualification for membership of Committee.

59. No bankrupt who has not obtained his final order of discharge, no person attainted of treason or convicted of felony or perjury or any infamous crime, no person of unsound mind, and no person not qualified as herein required, shall be capable of being or continuing a member of any Committee.

Provision for constitution of new school districts.

60. Upon the memorial of not less than ten householders of any locality praying for the erection of such locality into a separate school district, or upon the report of an Inspector, or otherwise at its own discretion for any reason that may seem to it sufficient, the Board of the district may call, by advertisement, a public meeting of the householders in such locality for the purpose of electing a Committee.

Meeting of householders.

61. It shall be the duty of such meeting to appoint a Chairman and elect a Committee in manner hereinafter provided, and the meeting shall likewise consider the boundaries of the proposed school district, and report the same to the Board, which may at its discretion fix the boundaries of the school district, whether those recommended by the meeting or otherwise, and cause the same to be publicly notified.

School districts in existence under repealed Acts or Ordinances to continue such.

62. All school districts constituted under the provisions of any Ordinance or Act hereby repealed shall be school districts for the purpose of this Act until altered as herein provided, and the persons in office at the time of the coming into operation of this Act as the Committee of every such district shall continue in office till their successors are elected.

In case any vacancy shall occur in any Committee before the first election is held under this Act, the Board may nominate a person or persons to be a member or members thereof.

(2.) *Election of School Committee.*

* * * * * *

(3.) *Meetings of School Committees.*

First meeting of School Committee.

69. The Committee of each school district shall hold its first meeting after election at some time and place to be from time to time appointed by the Board of the district within which such school district is.

Election of Chairman.

At its first meeting, or as soon thereafter as conveniently may be, it shall elect, by a majority of the votes of the members present thereat, one of its body to be Chairman until the next election of the School Committee.

---

* Sections 63 to 68 repealed. See "The School Committees Election Act, 1891."

Evening sc

86. Every male teacher having principal charge of a public school may open an evening school for pupils above thirteen years of age, but at such evening schools the teacher may charge a fee for the instruction of such pupils, subject to the approval of the Committee.

Expulsion children in certain cas

87. It shall be lawful for the teacher of any school to expel or forbid the attendance of any child for want of cleanliness, or who may be likely to communicate any contagious disease, or who from gross misconduct or incorrigible disobedience may be considered an injurious or dangerous example to the other scholars.

> The parent or guardian of any child so expelled, or whose attendance has been forbidden, shall have a right of appeal, first to the Committee, and finally to the Board of the district.

Itinerant teachers m be appoint

Aided scho

88. In outlying districts, or parts of the country where from the scattered state of the population it is not practicable to establish a public school, the Board may appoint itinerant teachers under regulations to be provided for that purpose. The Board may also, on the recommendation of the Inspector, in such outlying districts which it would be premature or inconvenient to constitute school districts, assist schools started by private enterprise, in books, school apparatus, or money, as the Board shall think expedient: Provided always that the schools so aided shall comply with the provisions of section eighty-four of this Act.

(2.) *Compulsory Education: Exemptions.*

Every chil above seve more than thirteen to attend sch

89. Subject to the provisions of this Act, the parent or guardian of every child not less than seven nor more than thirteen years of age shall, in case such child lives within the distance of two miles, measured according to the nearest road, from a public school within a school district, send such child to school for at least one-half of the period in each year during which the school is usually open.

Exemption

90. The parent or guardian of any child may apply for and receive a certificate from the Committee in the school district in which such child resides exempting such child from attendance in whole or in part at school, upon satisfying the Committee of the existence of any one of the following grounds: namely

(1.) That the child is under efficient or regular instruction otherwise, or is attending some private school or some educational institution not supported by grants from the Board, and which school or institution provides for instruction in reading, writing, and arithmetic on week days:

(2.) That the child is prevented from attending school by sickness, danger of infection, temporary or permanent infirmity, or other unavoidable cause:

(3.) That the road between the child's residence and the school is not sufficiently passable for such child:

(4.) That one of the Inspectors or the master of any public school has, by writing under his hand, certified that such child has reached a standard of education prescribed by any regulations under this Act.

And every such certificate of exemption shall state the ground of exemption, and shall be in force for a period of one year or for a shorter period, as may be named in such certificate; and during the period named in such certificate the holder thereof shall be freed from the operation of the provisions of this Act in respect of the child named therein: Provided always that any parent dissatisfied with the decision of the Committee in refusing to grant an exemption certificate may appeal to the Board against such decision, and the Board may overrule or confirm such decision.

n case child loes not attend chool, notice nay be given.

91. In case any Committee ascertains that any child between the ages of seven and thirteen years, and resident within the distance of two miles from a public school within its district, does not attend school, the Clerk or any member of such Committee may give the parent or guardian of such child notice in writing, in the form or to the effect in the Third Schedule hereto, calling upon such parent or guardian to send such child to school.

?roceedings to ompel ttendance.

92. If the parent or guardian of any child between the ages of seven and thirteen resident within two miles from a public school, not holding a certificate of exemption as aforesaid in respect of such child, refuses or neglects to send such child to a public school after having been called upon in manner aforesaid to do so, the parent or guardian of such child may be summoned before any two Justices of the Peace, who may order such parent or guardian to send such child to a public school.

(3.) *Penalties in certain Cases.*

Penalty for compliance order of Ju

93. In case any parent or guardian, after having been ordered as aforesaid by any two Justices of the Peace to send any child to a public school, neglects to obey such order, or, having obeyed the same for a time, without sufficient cause ceases to do so, such parent or guardian shall be liable to a penalty not exceeding forty shillings, and the same proceedings may be taken week by week in the case of failure by such parent to comply with the order aforesaid.

In any information or complaint under this Act, whether for recovery of penalties or for orders to send children to school, the allegation that a child is between the ages of seven and thirteen years shall be deemed sufficient *primâ facie* evidence of the fact until the contrary is proved, and in every case the father and mother or guardian of any child may be witnesses.

Proceeding be taken u "Justices c Peace Act,

94. All proceedings for orders to send children to school and for recovery of penalties under this Act may be had and taken in the manner prescribed by "The Justices of the Peace Act, 1866."

Compulsor clauses, wh shall be enf

95. The parts of this Act from section eighty-nine to section ninety-three, both inclusive, shall only come into force in any school district upon the vote of a majority of the Committee of such district.

Penalty for ful disturb of school.

96. Any person who shall wilfully disturb any school, or who shall upbraid, insult, or abuse any teacher in the presence or hearing of the pupils assembled in school, shall be liable to a penalty not exceeding forty shillings.

(4.) *Inspection of Schools.*

Inspection schools.

97. All public schools within the meaning of this Act shall be inspected at such times and in such manner as may be prescribed by regulations.

Private sch may be ins on request managers.

98. Where the teachers or managers of any private school desire to have their school inspected by an Inspector, such teachers or managers may apply to the Board to authorise such inspection, and the same, when authorised, shall be conducted in like manner as the inspection of public schools.

The term "managers" shall mean and include all persons who have the control and management of any such school, whether the legal interest in the schoolhouse is or is not vested in them.

"School-age" means any age between the years of five and fifteen, reckoned in each case from the last-preceding birthday.

Public schools to be conducted in accordance with regulations.

84. Every public school shall be conducted in accordance with the following regulations (a copy of which regulations shall be conspicuously put up in every such school): namely,—

Course of instruction in public schools.

(1.) The subjects of instruction shall be as follows:—

Reading,
Writing,
Arithmetic,
English grammar and composition,
Geography,
History,
Elementary science and drawing,
Object-lessons,
Vocal music,
And (in the case of girls) sewing and needlework, and the principles of domestic economy.

But no child shall be compelled to be present at the teaching of history whose parents or guardians object thereto.

(2.) The school shall be kept open five days in each week for at least four hours, two of which in the forenoon and two in the afternoon shall be consecutive, and the teaching shall be entirely of a secular character.

(3.) The school-buildings may be used on days and at hours other than those used for public-school purposes, upon such terms as the Committee may from time to time prescribe.

(4.) The class-books used in the school shall be such only as shall be approved by the Governor in Council.

(5.) The school shall be open at all times to the visits of an Inspector.

(6.) No fees shall be payable at any public school except as hereinbefore provided in the case of district high schools.

Military drill and physical training in certain schools.

Playgrounds.

85. In public schools provision shall be made for the instruction in military drill of all boys, and in such of the schools as the Board shall from time to time direct provision shall also be made for physical training, and whenever practicable there shall be attached to each school a playground of at least a quarter of an acre.

Boards to r
annual rep

102. Every Board shall, before the last day of March in each and every year, forward to the Minister a report of its proceedings during the previous year; and such a report shall contain a full account of the income and expenditure of the Board, audited as provided by regulations, and also such information relative to the public schools and to educational matters within the district as the Minister may direct.

Committee
forward ye
report to B

103. Every Committee shall, before the *last day of January** in each and every year, forward to the Board a report of its proceedings during the *previous year.** Such reports shall contain a full account of the income and expenditure of the Committee, audited as provided by regulations, and also such information relative to the public schools and to educational matters within the district as the Board may direct.

School lan
and buildin
exempt fro
rates.

104. Notwithstanding anything contained in "The Rating Act, 1876," or in any amending Act, no rates shall be levied on any lands or buildings used for public-school purposes.

SCHEDULES.

Schedules.

FIRST SCHEDULE.

List of Acts and Ordinances Repealed.

"The Education Boards Act, 1876."

Acts of the Province of Auckland.

"The Education Act, 1872." "The Education Act 1872 Amendment Act, 1874."

Ordinances of the Province of Taranaki.

"The Educational Ordinance, 1874." "The Educational Ordinance 1874 Amendment Ordinance, 1875."

Act of the Province of Hawke's Bay.

"The Hawke's Bay Education Act, 1873."

Acts of the Province of Wellington.

"The Wellington Education Act, 1871." "The Wellington Education Act Amendment Act, 1872." "The Wellington Education Act 1871 Amendment Act, 1873." "The Wellington Education Act Amendment Act, 1874."

Acts of the Province of Nelson.

"The Education Act, 1863." "The Education Act Amendment Act, 1867." "The Education Act Amendment Act, 1869." "The Education Act Amendment Act, 1873."

---

* The words "fourth Monday in April" are substituted for the words "last day of January;" and the words "the previous year" relate to the year ending on the thirty-first day of March next preceding. (*Vide* section 19 of "The School Committees Election Act, 1891.")

(1.) That the child is under efficient or regular instruction otherwise, or is attending some private school or some educational institution not supported by grants from the Board, and which school or institution provides for instruction in reading, writing, and arithmetic on week days:

(2.) That the child is prevented from attending school by sickness, danger of infection, temporary or permanent infirmity, or other unavoidable cause:

(3.) That the road between the child's residence and the school is not sufficiently passable for such child:

(4.) That one of the Inspectors or the master of any public school has, by writing under his hand, certified that such child has reached a standard of education prescribed by any regulations under this Act.

And every such certificate of exemption shall state the ground of exemption, and shall be in force for a period of one year or for a shorter period, as may be named in such certificate; and during the period named in such certificate the holder thereof shall be freed from the operation of the provisions of this Act in respect of the child named therein: Provided always that any parent dissatisfied with the decision of the Committee in refusing to grant an exemption certificate may appeal to the Board against such decision, and the Board may overrule or confirm such decision.

In case child does not attend school, notice may be given.

91. In case any Committee ascertains that any child between the ages of seven and thirteen years, and resident within the distance of two miles from a public school within its district, does not attend school, the Clerk or any member of such Committee may give the parent or guardian of such child notice in writing, in the form or to the effect in the Third Schedule hereto, calling upon such parent or guardian to send such child to school.

Proceedings to compel attendance.

92. If the parent or guardian of any child between the ages of seven and thirteen resident within two miles from a public school, not holding a certificate of exemption as aforesaid in respect of such child, refuses or neglects to send such child to a public school after having been called upon in manner aforesaid to do so, the parent or guardian of such child may be summoned before any two Justices of the Peace, who may order such parent or guardian to send such child to a public school.

EDUCATION DISTRICT OF NELSON.

All that area in our Colony of New Zealand, being the Counties of Collingwood, Buller, Inangahua, and Waimea, as described in "The Counties Act, 1876," and including all boroughs therein.

EDUCATION DISTRICT OF NORTH CANTERBURY.

All that area in our Colony of New Zealand, being the Counties of Kaikoura, Amuri, Cheviot, Ashley, Akaroa, Selwyn, and Ashburton, as described in "The Counties Act, 1876," and including all boroughs therein.

EDUCATION DISTRICT OF SOUTH CANTERBURY.

All that area in our Colony of New Zealand, being the Counties of Geraldine and Waimate, as described in "The Counties Act, 1876," and including all boroughs therein.

EDUCATION DISTRICT OF WESTLAND.

All that area in our Colony of New Zealand, being the Counties of Westland and Grey, as described in "The Counties Act, 1876," and including all boroughs therein.

EDUCATION DISTRICT OF OTAGO.

All that area in our Colony of New Zealand, being the Counties of Waitaki, Vincent, Maniototo, Waikouaiti, Taieri, Peninsula, Bruce, Tuapeka, and Clutha, as described in "The Counties Act, 1876," and including all boroughs therein.

EDUCATION DISTRICT OF SOUTHLAND.

All that area in our Colony of New Zealand, being the Counties of Lake, Southland, Fiord, Wallace, and Stewart Island, as described in "The Counties Act, 1876," and including all boroughs therein.

THIRD SCHEDULE.

To A.B.

You are hereby required to send your child C.D., between the ages of seven and thirteen years, to a public school; and if you fail to do so you will be summoned before two Justices of the Peace to answer for such neglect.

If your said child is (1) under efficient instruction otherwise than at a public school, or (2) if it is prevented from attending school by sickness or unavoidable cause, or (3) if the road between the child's residence and the nearest public school is not sufficiently passable for your child, or (4) if you have obtained a certificate in writing from a Government Inspector of Schools or the master of any public school that your child has reached the standard of education prescribed by the Regulations, and if you satisfy the School Committee of any of these facts, you will receive a certificate exempting you from sending your child to school.

E.F.,
Clerk [*or* Member] of the School Committee
of the District of .

Dated this day of , 18 .

Governor may order inspection of industrial schools, &c.

99. The Governor may from time be made by an Inspector of the Ed industrial school, reformatory, gaol- institution maintained wholly or in from the public revenue, or by endo or grants of lands made at any tim wise.

(5.) *Regulations a*

Regulations may be made by Order in Council.

100. The Governor in Council m of this Act, from time to time ma tions and orders—

(1.) For the organization and ment of Education :
(2.) For defining the principle on ance shall be calculated :
(3.) For the examination and cla
(4.) For the employment, educ pupil-teachers :
(5.) For the issue of certificates
(6.) For the establishment and training colleges :
(7.) For defining the standards o provisions of this Act, m tions :
(8.) For prescribing the times accounts of Boards and C
(9.) For making such other reg to secure the due adminis

And all such regulations shall fix a into force, and shall be published they shall have the force of law, a Houses of the General Assembly a as circumstances will permit.

Minister to make annual report.

101. The Minister shall, before each and every year, lay before the progress and condition of public during the year ending the thirty-f diately preceding, and also a genera

Such report and statement shall of the General Assembly within on then sitting, and, if the Assembly within one month after the next ens

County of Hawera deeme to be in Wang nui Education District.

4. The County of Hawera is hereby declared to be, and shall be deemed to have been, as and from the date of the constitution thereof, comprised within the Education District of Wanganui.

Wanganui Ed cation Board indemnified fo past actions in relation to new county.

5. The Education Board of the District of Wanganui, and every member of such Board, and all other persons whomsoever acting under the powers and authorities of "The Education Act, 1877," are hereby, each and every of them, indemnified, freed, and discharged from and against all penalties whatsoever (if any) incurred by them, or any or either of them, for or by reason of any act, matter, or thing done, made, or authorised by them, or any or either of them, under the powers aforesaid, within that part of the Education District of Wanganui now forming the County of Hawera, from and since the date of the constitution of the said county.

General issue may be plead and this Act given in evidence.

6. In case any action, suit, or prosecution of any nature whatsoever shall be brought against them, or any or either of them respectively, for or on account of any penalty whatsoever incurred, or to be incurred, for or by reason of any infringement of the aforesaid Act, they or he may plead the general issue, and upon their defence give this Act and the special matter in evidence upon any trial to be had thereupon.

As to boroughs, &c., on boundaries of districts.

7. In any case where a borough or town district shall be intersected by the boundary of any education district now or hereafter constituted the Governor may, by Order in Council, direct that such borough or town district shall form part of such education district as he may think fit.

Boroughs included in existing education districts.

8. The several education districts constituted under "The Education Act, 1877," and intended to be described in the Second Schedule thereto, shall, as from the date when the said Act came into operation, be deemed to have included and shall hereinafter include in their boundaries all boroughs within the territorial area comprised in the description of the several counties mentioned in the said Schedule, although such boroughs do not actually form part of such counties.

Validation of acts done.

And every act, deed, instrument, matter, or thing whatsoever heretofore done or made in respect of or in relation to every such district shall be and be deemed to have been valid and effectual to all intents and purposes so far as such validity may depend on the description of the said several districts.

“THE EDUCATION ACT 1877 AMENDMENT ACT, 1885

Title.
Preamble.
1. Short Title.
2. Interpretation.
* * * * * *
6. Child must attend school thirty days in each quarter.
7. Onus shall be on parent or guardi of proving that child is attendi school.
8. Certificate of election of meml and appointment of clerk.
9. Commencement of Act.

Title.

AN ACT to amend “The Education Act, 1877.”

[*17th September,* 1885

Preamble.

WHEREAS it is expedient to amend “The Education Act, 1877 in manner hereinafter provided:

Be it therefore enacted by the General Assembly of N Zealand in Parliament assembled, and by the authority of t same, as follows:—

Short Title.

1. The Short Title of this Act is “The Education Act 18 Amendment Act, 1885.”

Interpretation.

2. The term “the said Act,” wherever in this Act occurrin shall mean “The Education Act, 1877.”

* * * * * *

Child must attend school thirty days in each quarter.

6. Every child required by the said Act to attend a pub school shall attend such school during at least thirty days each quarterly school-term.

Onus shall be on parent or guardian of proving that child is attending school.

7. On the hearing of any information or complaint under t said Act for an order to send children or a child to a pub school, or for the recovery of a penalty in respect thereof, t onus shall be on the parent or guardian of such children child of showing that such children or child have or has attend or are or is attending a public school, in accordance with t requirements of the said Act, or that such children or child a or is exempt from such attendance thereunder.

Certificate of election of member and appointment of clerk.

8. A certificate under the hand of the Chairman or pers acting as Chairman of a School Committee, setting forth t name of the clerk or member of Committee by whom the pr ceedings in the last-preceding section shall have been co menced, shall be conclusive evidence that such clerk was du appointed and that such member was duly elected, and it sh not be competent in any such proceedings to inquire into or dispute the election of the persons acting as members of t School Committee.

Commencement of Act.

9. This Act shall come into operation on the first day January, one thousand eight hundred and eighty-six.

---

* Sections 3, 4, and 5 repealed. See “The School Committees Election Act, 1891

"THE WELLINGTON AND WANGANUI EDUCATION DISTRICTS ACT, 1886."

Title.
1. Short Title.
2. Horowhenua County to form part of Wellington District.

Title.

An Act for the Readjustment of the Boundaries of the Education Districts of Wellington and Wanganui.

[30*th July,* 1886.]

Be it enacted by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:—

Short Tit

1. The Short Title of this Act is "The Wellington and Wanganui Education Districts Act, 1886."

Horowhe County t part of W ton Distr

2. The Horowhenua County is hereby declared to be, and shall from and after the date of the passing of this Act be deemed to be, comprised within the Education District of Wellington, constituted under "The Education Act, 1877."

The Oroua County shall continue to form part of the Education District of Wanganui constituted as aforesaid.

"THE WESTLAND AND GREY EDUCATION BOARDS ACT, 1888."

Title.
1. Short Title. Act to be read with "The Education Act, 1877."
2. Constitution of Westland and Grey Education Districts as from 14th September, 1885.
3. Constitution of Education Boards.
4. Boards under this Act to be the same as previously existing.
5. Three members to be elected for each Board.
6. Elected members to retire biennially.
7. Ordinary election to supply vacancies.
8. Governor to nominate four members for each Board.
9. Two nominated members to retire every second year.
10. Biennial appointment of two members by the Governor.
11. Qualification and disqualification of nominated members.
12. Members of School Committees now in office deemed duly elected for new districts.
13. One School Commissioner to be elected by each Board.
14. Property vested in Boards before coming into operation of this Act to vest in Board constituted under this Act.
15. Validation of elections of existing Boards.
16. Repeal.
Schedule.

and shall also transmit to each Committee the name of such person.

The day of election shall be some day not later than the fifteenth of March.

(2.) On or before the last day of February in the same year, the Committee in each district shall send to the Secretary of the Board a list in writing, setting forth the full names of not more than three of the persons whose names have been publicly notified as aforesaid.

(3.) The Secretary shall carefully keep all such lists, and on the day fixed by the Board shall proceed to ascertain what persons, so nominated, have the greatest number of votes; and the three persons who have the greatest number of votes shall be the elected members of the Board.

(4.) After it has been ascertained what candidates have by an absolute majority of votes been duly elected, if it shall appear that there is an equality of votes for one or more candidates remaining to complete the number of three elected members, the Board shall decide which of such persons shall be the member or members.

(5.) If a Committee refuses or neglects to transmit to the Board either of the lists of names hereinbefore required to be transmitted, within the time appointed, the Board shall proceed to the election of members notwithstanding such refusal or neglect.

(6.) Every election shall be conducted publicly by the Board in such manner as it thinks fit.

(7.) The Board shall publicly notify the names of the persons who have been found to be elected, and such notification shall be signed by the Chairman of the Board, and shall be final and conclusive for all purposes.

A copy of such notification, signed by the Chairman, shall be transmitted to the Minister of Education without delay.

(8.) In the event of three persons not being nominated as herein provided, the Board shall elect such a number of duly-qualified persons as may be necessary to complete the number of the Board.

The members of the Board so elected shall take office on the thirty-first day of March, one thousand eight hundred and ninety.

Elected members to retire biennially.

6. On the thirty-first day of March, one thousand e hundred and ninety-two, and on the same day and montl every second year thereafter, the elected members of each B then in office shall retire.

All retiring elected members shall be eligible for re-electi

Ordinary election to supply vacancies.

7. In the month of March, one thousand eight hundred ninety-two, and in the same month in every second year th after, an election shall be held for the purpose of filling vacancies caused by the retirement of members as aforesaid.

All the proceedings in and about such election shall be and taken in the same manner as prescribed in section five u the first election of Boards.

Governor to nominate four members for each Board.

8. At some time before the thirty-first day of March, thousand eight hundred and ninety, the Governor shall app for each of the Education Boards of Westland and Grey persons to be members of such Boards respectively (he referred to as "nominated members"), who shall take offic such last-mentioned day.

Two nominated members to retire every second year.

9. On the thirty-first day of March, in the year one thous eight hundred and ninety-two, and on the same day and mo in every second year thereafter, two of the nominated mem of each Board then in office shall retire.

The nominated members to retire in the year one thous eight hundred and ninety-two shall be determined by Board by ballot not later than the thirty-first day of Decen immediately preceding.

In every second year after the year one thousand eight h dred and ninety-two the two nominated members shall re who have served longest in such Board without reappointme

All retiring nominated members shall be eligible for appointment.

Biennial appointment of two members by the Governor.

10. At some time before the thirty-first day of March, thousand eight hundred and ninety-two, and before the s day in every second year thereafter, the Governor shall app for each of the Education Boards of Westland and Grey persons to be members of such Boards respectively, who s take office on such last-mentioned days respectively.

Qualification and disqualification of nominated members.

11. Sections twenty to twenty-three, both inclusive, of said Act shall apply in respect of every person nominated proposed to be nominated as a member of each such Board the same manner as the said sections apply to persons ele or proposed to be elected as members thereof respectively;

the said sections shall be accordingly read, *mutatis mutandis*, for the purpose of giving effect to the provisions of this section, saving always that any nominated member may resign his seat by letter to the Governor instead of by writing under his hand to the Chairman of the Board, as provided in section twenty-one of the said Act.

Members School Co mittees n office dee duly elect new distri

12. The members of the several School Committees for the several districts comprising the districts constituted by this Act in office at the commencement of this Act shall be and be deemed to have been duly elected, notwithstanding any defect in the mode or time of election, and, until new elections shall be held, shall be deemed to be the several School Committees in the districts constituted by this Act.

One Scho Commissi be elected each Boar

13. The School Commissioners for the Provincial District of Westland, under "The Education Reserves Act, 1877," and "The Education Reserves Act, 1882," at present in office shall remain in office until the period of the next triennial election of such Commissioners, and at such election and every subsequent triennial election each of the Education Boards of the Education Districts of Westland and Grey respectively shall elect one person to be a School Commissioner for the said provincial district, and shall respectively elect a successor to any such person in case of a vacancy in his office being created.

So much of the last-named Act is repealed as provides in section two thereof that two persons shall be chosen by the Education Board of the Education District of Westland to be School Commissioners in the Provincial District of Westland.

Property in Boards coming in operation Act to ves Board con stituted u this Act.

14. All real property which immediately before the coming into operation of "The Westland and Grey Education Boards Act, 1885," was vested in the Board and the Commissioners appointed under "The Westland Education District Subdivision Act, 1884," shall, on the date when the Boards appointed under this Act respectively come into office, be vested in the Board of the district constituted under this Act wherein such property is situate; but the change of ownership hereby created shall not affect any valid lease, charge, or contract now subsisting in respect of any such land, but the same shall vest in the new Board, subject thereto in all respects.

In respect of any land affected by "The Westland and Grey Education Boards Act, 1885," or by this Act, which shall be held by any title conferred under "The Land Transfer Act, 1870," or its amendments, or "The Land Transfer Act, 1885," the District Land Registrar of Nelson and the District Land Registrar of Westland respectively shall, upon being satisfied thereof, and subject to the foregoing provisions of this section, enter in the register-book, and upon any instrument presented for that purpose, a note of the change of ownership created by "The Westland and Grey Education Boards Act, 1885," or by this Act, which respectively shall be sufficient authority for that purpose.

lidation of ctions of isting Boards.

15. Whereas "The Westland and Grey Education Boards Act Continuance Act, 1887," perpetuated the operation of "The Westland and Grey Education Boards Act, 1885," and an election of members of each of the Education Boards of Westland and Grey has been held in the present year, one thousand eight hundred and eighty-eight, under the erroneous impression that the election power contained in "The Westland and Grey Education Boards Act, 1885," had been renewed and perpetuated: And whereas also nominations to the said several Boards have also been made by the Governor for the present year without authority of law:

And whereas the several persons elected and nominated as aforesaid did respectively come into office as members of the Education Boards of Westland and Grey on the thirty-first day of March in the now current year; and it is expedient that the aforesaid elections and nominations should respectively be validated, and that the persons so elected and nominated should be confirmed in their respective offices:

Be it therefore further enacted as follows:—

Notwithstanding any want of authority in that behalf, the election of members for the Education Boards of Westland and Grey respectively held in the month of March of the present year one thousand eight hundred and eighty-eight, and the nominations of members to the said Boards respectively made by the Governor in the same year, are hereby declared to be valid, and shall not be called in question or be set aside by reason of the same having been respectively held or made without sanction of law.

The persons elected or nominated to the said Education Boards of Westland and Grey respectively as aforesaid are hereby declared to be members of the said Boards validly appointed thereto, and to have so been from the thirty-first day of March in the year one thousand eight hundred and eighty-eight.

16. "The Westland Education District Subdivision Act, 1883," "The Westland Education District Subdivision Act, 1884," "The Westland and Grey Education Boards Act, 1885," and "The Westland and Grey Education Boards Act Continuance Act, 1887," are hereby respectively repealed. **Repeal.**

SCHEDULE.

Schedule.

EDUCATION DISTRICT OF WESTLAND.

ALL that area in the Colony of New Zealand, being the County of Westland and the Boroughs of Hokitika, Kumara, and Ross.

EDUCATION DISTRICT OF GREY.

All that area in the Colony of New Zealand, being the County of Grey, and including the Borough of Greymouth.

"THE SCHOOL COMMITTEES ELECTION ACT, 1891."

Title.
1. Short Title.
2. Interpretation.
3. Qualification of electors.
4. Qualification of members. Disqualification.
5. Annual election of School Committees.
6. Board to call for nominations.
7. List of nominations.
8. Proceedings at meeting.
9. Proceedings at elections.
10. Ballot-box to be provided by Committee.
11. Conduct of ballot.
12. Voting at elections. Casting-vote.
13. Disputes as to validity of elections to be settled by Board of district.
14. Provision in case of failure to elect on day of annual meeting.
15. In case of failure to elect at second meeting, Board may appoint Committee.
16. Duration of office of Committee.
17. Forfeiture of seat.
18. Special elections.
19. Yearly report to Board.
20. Repeals.
Schedule.

AN ACT to make Better Provision for the Election of School Committees. **Title**

[*24th September*, 1891.]

BE IT ENACTED by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:—

Short Title.

1. The Short Title of this Act is "The School Comm Election Act, 1891."

Interpretation.

2. For the purposes of this Act, and "The Education 1877" (herein referred to as "the said Act"),—

"Board" means the Education Board of the educ district:

"District" means a school district:

"Dwelling-house" means a permanent structure, shall not include a tent or other temporary shelt

"Householder" means and includes—

(1.) Every adult male or female person wh for the period of three months next before the d election resided in any dwelling-house within school district as owner or tenant thereof; and,

(2.) If not qualified under the previous subse includes the father wherever resident, or, if dead or absent from the colony, the guardian or person, wherever resident, who has the actual cu of any child attending any State school sit within such district; and

(3.) In school districts situated within a claimed mining district, means and includes holder of a miner's right having for the peri three months next before the day of election re in the district, and not being an alien:

"Resident householder" means a householder reside the district.

Qualification of electors.

3. Every householder of a district is qualified to vote a election of members of the School Committee for such dist

Qualification of members.

4. Every resident householder in a district, and no person, is qualified to be elected a member of the School mittee for such district, excepting as follows:—

Disqualification.

No householder who is a paid servant of the Education partment or of any Education Board or School Committee be eligible to be elected as a member of any School mittee.

Annual election of School Committees.

5. On or before the first Monday in April in each yea Board shall publicly notify that a meeting of householde each district will be held on the fourth Monday in that m for the purpose of electing not less than five nor more than resident householders to form the Committee for such dist the hour and place for such meeting to be fixed by the B

Where the average attendance of any school or schools under the Committee of a district has not for the last-preceding school-year exceeded twenty-five children, the Board shall call on the electors to nominate and elect a Committee of five members; where the average attendance has exceeded twenty-five and has not exceeded two hundred, the Board shall call for the nomination and election of a Committee of seven members; and where the number of children in average attendance has exceeded two hundred, the Board shall call for the nomination and election of a Committee of nine members. Notwithstanding anything contained in the said Act the quorum of such Committees respectively shall be as follows—that is to say, three for a Committee of five, four for a Committee of seven, and five for a Committee of nine; and no business shall be transacted at any meeting unless there be a quorum present thereat.

Board to c nominatio

6. In the notice appointing the time and place for holding the annual meeting of householders, the Board shall call upon the householders in each district to send in writing, by post or delivery so as to be delivered to the respective Chairmen of the several School Committees not later than eight o'clock in the evening of the third Monday in April, the names of persons, being resident householders, nominated by them for election to serve upon the Committee for the year next ensuing.

Each nomination shall be signed by the proposer and by the candidate, and shall be in the form set forth in the Schedule hereto or to the effect thereof.

List of nomination

7. The Chairman of every Committee shall cause a list of all candidates so nominated to be displayed upon the outer door of every schoolhouse within the district under the control of such Committee, on the day next after the third Monday in April, or as soon thereafter as may be.

Proceeding at meeting.

8. At each annual meeting a Chairman shall be chosen, and the Committee shall give a full report of its proceedings for the year ending on the thirty-first day of March preceding such annual meeting, and the householders present shall proceed to elect a new Committee for the then current year, as hereinafter provided, and may re-elect any of the persons going out of office, if duly qualified and nominated, to be members of such new Committee: Provided that any candidate nominated may withdraw from any contest at any time previous to the ballot being taken, either verbally, or in writing signed by the candidate and wit-

nessed by a householder, and delivered to such Chairma
either of which cases he shall be deemed in future procee
at such meeting not to have been nominated.

At every annual meeting the Chairman shall have a deli
tive vote and a casting-vote.

Proceedings at elections.

9. Notwithstanding anything contained in section six o
Act, any householder present at the annual meeting m
such meeting nominate for election to serve on the Comn
any resident householder; and a resident householder nomi
at the meeting, and, by word of mouth or by writing giv
the Chairman, consenting to be so nominated, shall be a c
date for election. The Chairman of the meeting shall
opportunity for nomination as allowed by this section o
Act, and shall then read or cause to be read a complete li
the persons nominated for election. The meeting shall then
ceed to elect the required number of persons to serve o
Committee.

If the number of duly-nominated candidates is equal t
number of persons to be elected, the Chairman shall declare
such candidates have been duly elected.

If the number of duly-nominated candidates is in exce
the number of persons to be elected, a ballot shall be taken,
up to the required number, those candidates shall be dec
duly elected for whom a preference has been proved b
number of the votes respectively recorded in their favour.

If the number of candidates duly nominated is less tha
number required to be elected the candidates duly nomi
shall be declared duly elected, and the Board shall appoint
resident householders as it deems fit to make up the numb
members of the Committee to the number required, and
member or members appointed in accordance with this prov
shall be deemed to have been duly elected.

Ballot-box to be provided by Committee.

10. In every school district in which there are more
one hundred children in the school under the care of the
mittee it shall be the duty of the Committee to provide a b
box, which shall be locked, and shall be placed in the sc
house or place of election in some accessible position on the
appointed for holding the election; and immediately befor
taking of any ballot the Chairman of such meeting shall u
the ballot-box and show that it is empty, and then shall lo
again, and shall not remove it from its place until the ele
is concluded.

16. "The Westland Education District Subdivision Act, 1883," "The Westland Education District Subdivision Act, 1884," "The Westland and Grey Education Boards Act, 1885," and "The Westland and Grey Education Boards Act Continuance Act, 1887," are hereby respectively repealed. **Repeal.**

SCHEDULE.

Schedule.

Education District of Westland.

All that area in the Colony of New Zealand, being the County of Westland and the Boroughs of Hokitika, Kumara, and Ross.

Education District of Grey.

All that area in the Colony of New Zealand, being the County of Grey, and including the Borough of Greymouth.

"THE SCHOOL COMMITTEES ELECTION ACT, 1891."

Title.
1. Short Title.
2. Interpretation.
3. Qualification of electors.
4. Qualification of members. Disqualification.
5. Annual election of School Committees.
6. Board to call for nominations.
7. List of nominations.
8. Proceedings at meeting.
9. Proceedings at elections.
0. Ballot-box to be provided by Committee.
1. Conduct of ballot.
12. Voting at elections. Casting-vote.
13. Disputes as to validity of elections to be settled by Board of district.
14. Provision in case of failure to elect on day of annual meeting.
15. In case of failure to elect at second meeting, Board may appoint Committee.
16. Duration of office of Committee.
17. Forfeiture of seat.
18. Special elections.
19. Yearly report to Board.
20. Repeals.
Schedule.

AN ACT to make Better Provision for the Election of School Committees. **Title**

[*24th September*, 1891.]

BE IT ENACTED by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:—

election if, in their opinion, the informality was not wilful, did not really affect the result of the election.

Provision in case of failure to elect on day of annual meeting.

14. If in any case the householders in any district shall, f any cause whatever, fail to elect a Committee upon the an day of meeting as hereinbefore provided, the Board of education district in which such school district is compri if it shall see fit, may fix another time for the nominations election respectively of a Committee for such district, and like notices of such meeting, with all necessary changes of d for the several matters incident to the election, shall be gi and the like proceedings taken thereat as are prescribed by preceding sections of this Act for an annual election.

In case of failure to elect at second meeting, Board may appoint Committee.

15. If after such last-mentioned meeting the househol neglect or refuse to elect a Committee, the Board may app one or two Commissioners, who shall hold office until the n annual meeting, and shall have all the powers and shall perf all the duties by law assigned to a School Committee.

Duration of office of Committee.

16. Every Committee elected as aforesaid shall hold of until the appointment of a new Committee, or a Commissio or Commissioners, and, if any vacancy shall occur by death otherwise in any Committee, the remaining members of Committee being not less than a quorum shall elect a quali person or persons to fill such vacancy or vacancies.

Forfeiture of seat.

17. If a member of a School Committee be absent with leave of the Committee during three consecutive months fr all meetings of the Committee, except from illness or ot cause to be approved by the Committee, or if a member cea to reside in the district, he or she shall cease to be a member the Committee, and his or her office shall thereupon be vacan

Special elections.

18. If by any means the number of members of a Sch Committee be reduced to less than the number required fo quorum, or if a majority of the members of any Committee se in their resignations to the Education Board, the Board m direct an election to be held to fill up the vacancies; and t proceedings in connection with any such election shall be t same as in the case of an annual election.

Yearly report to Board.

19. Section one hundred and three of the said Act is here amended by the substitution of the words "fourth Monday April" for the words "last day of January," and the wo "the previous year" shall be deemed to relate to the year en ing on the thirty-first day of March next preceding.

Repeals.

20. So much of section four of "The Education Act, 187

as defines the meaning of the word "householder," and sections sixty-three to sixty-eight of the said Act, also sections three, four, and five of "The Education Act 1877 Amendment Act, 1885," and also "The School Committees Election Act, 1890," are hereby repealed.

SCHEDULE.

Schedule.

To the Chairman of the School Committee.

I, THE undersigned, hereby nominate [*Christian name and surname of candidate*] for election as a member of the above School Committee for the ensuing year.

(Signature of nominator.)

I hereby consent to the above nomination.

(Signature of candidate.)

Dated April , 18 .

REGULATIONS.

[Order in Council dated 5th July, 1887, as amended by Orders dated 5th Januar 2nd February, and 12th June, 1888; 1st May, 1889; 8th and 27th February, 10 June, 1st July, 16th September, and 2nd December, 1890; 10th September a 21th October, 1891.]

I.—Attendance-registers and Returns.

1. The head-teacher of each school shall keep a register of attendanc in a form which shall be furnished by the Minister of Education; and a the teachers in the school shall assist in making up weekly and quarterl summaries of attendance.

2. The attendance of the scholars in each school shall be registere every morning and every afternoon at a convenient time within th school-hours.

3. The attendance of a child at morning school shall be reckoned a one attendance, and the attendance of a child at afternoon school shall b reckoned as one attendance, and a school open in the morning and ope in the afternoon shall be deemed to have been open twice. The schoo shall be held to be open any morning or afternoon if one child be presen before the first half-hour of the ordinary school-time has passed. Th average daily attendance for any period shall be ascertained by dividing th total number of attendances for the period by the number of half-days o which the school has been open during the period.

4. It shall be the duty of the head-teacher of every school to remov the name of any pupil from the school-roll on the day on which suc teacher first knows that such pupil has been definitely removed from th school; and, if at the end of any quarter ending with the last day o March, June, September, or December the school-roll contains the nam of any pupil that has not been in attendance at some time or other durin such quarter, the head-teacher shall then remove the name of such pupi from the roll.

5. The Chairman of every School Committee shall, as soon as possibl after the end of each quarter, cause to be transmitted to the Educatio Board of the district a return exhibiting, in the form hereinafter prescribed, the state of the school-roll and of the attendance for such quarter.

6. The form of quarterly return of attendance from each school shal be as follows:—

Return of Attendance for Quarter ending , 18 .

[N.B.—This return should be sent in to the Board within five days after the end of the quarter.]

______ School.	Half-Days.	Boys.	Girls.	Total.
I. How many scholars were returned as belonging to the school at the end of last quarter? [*Line VII. of last return*]	—			
II. How many of these have left, not having attended at all this quarter?	—			
III. What, then, was the number really belonging to the school at beginning of quarter? [*Subtract II. from I.*]	—			
IV. How many have been admitted during the quarter?	—			
V. How many, therefore, have belonged to the school this quarter? [*Add III. and IV.*]	—			
VI. How many of these (in V.) left before the end of the quarter?	—			
VII. What, then, is the number now belonging? [*Subtract VI. from V.*]	—			
VIII. What is the average weekly number on the roll during the quarter?	—			
IX. How many times has the school been open this quarter (mornings and afternoons being reckoned separately)?		—	—	—
X. What is the number of half-day attendances? ..	—			
XI. What, then, is the average attendance? [*Divide X. by IX.*]	—			
XII. What has been the largest attendance on any half-day this quarter?	—			

Ages.	Boys.	Girls.	Total.	Standard Classes.	Boys.	Girls.	Total.
5 years and under 6				Class P.			
6 " 7				" S1			
7 " 8				" S2			
8 " 9				" S3			
9 " 10				" S4			
10 " 11				" S5			
11 " 12				" S6			
12 " 13				" S7			
13 " 14							
14 " 15							
15 years and above							
Total as in line VII. ..				Total as in line VII. ..			

5. The Auditor appointed to audit the accounts of any School Committee shall have access to all the books and accounts of the Committee and of its officers, and shall examine the general statement of the receipts and expenditure of the Committee, and compare the same with the accounts and vouchers relating thereto, and shall either certify under his hand that he has found the same to be correct, duly vouched, and in accordance with law, or specially report to the Education Board of the district in what respect he finds it otherwise.

IV.—Inspection of Schools and Standards of Examination.

1. Once in every year every public school shall be both inspected and examined by a Public School Inspector. If possible, there shall be an interval of some months between the inspection and the examination. As soon as possible after the inspection the Inspector shall present an "inspection report," and as soon as possible after the examination an "examination report." In these regulations a year means a year beginning with the 1st of January; and an Inspector's annual return must relate strictly to a year as thus defined.

2. The inspection report shall relate to such topics as the following:—

I. List of standard classes and teachers; II. Remarks on the organization, as shown under Topic I.; III. Suitability of time-tables; IV. Remarks on the methods and quality of the instruction in general or in detail; V. Order and discipline, and the tone of the school with respect to diligence, alacrity, obedience, and honour; VI. Supervision in recess; VII. Manners and general behaviour of the pupils; VIII. State of buildings, ground, and fences; IX. Sufficiency of school accommodation; X. Cleanliness and tidiness of rooms and premises, including outside offices; ventilation and warming; XI., &c. Other topics.

The report shall be divided into sections, and the section relating to any topic in the foregoing list shall bear the number assigned to that topic in the list. The omission of any number shall be sufficient to indicate that the Inspector does not deem it necessary to report on the topic corresponding to that number. Section I. shall in no case be omitted from the report: it shall show what "standard classes" within the meaning of Regulation 4 there are in the school, whether the standard classes are grouped in classes for instruction, and, if so, how they are grouped, and by what teacher each class is taught, describing each teacher by his position in the school as "sole teacher," "headmaster," "first assistant," "third-year pupil-teacher," or as the case may be. Any section except section I. may, if the Inspector so choose, consist of the appropriate number and of a single word, such as, "satisfactory."

3. The examination report shall show the number of pupils presented in each standard class, the number of "passes" in each standard, of failures in each class, of "exceptions" in each class, and of pupils absent from each class, the "percentage of passes," the "percentage on class-subjects," the "additional marks," and the character of the work done in classes P and S7. The terms used in this regulation shall be used in the examination report in the sense in which they are used in these regulations.

4. For the purposes of inspection and examination, but not necessarily for purposes of instruction, the pupils of every public school shall be

divided into standard classes, as follows: The preparatory class shall include all pupils below Class I., and may be called Class P. Class I. shall include all the children preparing for or presented for Standard I., and may be called S1; Class II. shall include all the children preparing for or presented for Standard II., and may be called S2; and so on to Class VI. Class VII. shall include all pupils that have passed the Sixth Standard, and may be called S7. If necessary, Class P may be divided, the lower part being called P1, and the next P2. For purposes of inspection and examination every pupil in the school must be considered to belong to one of the *standard* classes as here defined, but for purposes of instruction the principal teacher of a school shall have full discretion to arrange his pupils in different classes for different subjects, according to their ability and proficiency with respect to the several subjects and according to the number of available teachers, and also to cause the children of two or more standard classes to be gathered into one class for instruction in any subject; and if any pupil by reason of special ability or proficiency in any subject receives in such subject the instruction proper to a higher *standard* class than that to which he is considered to belong he may in such subject be examined with the higher class in which he has been placed for instruction, and if, being so examined, he satisfies the examiner his success shall be reckoned towards his "pass" in his proper *standard* class. Also, at the discretion of a principal teacher, a pupil may be promoted to a higher standard class though he has failed at the examination in the work of the standard for which he was last presented.

5. At every standard examination the head-teacher shall present all the pupils on the school-roll, by giving the Inspector a list for each standard class, containing the names of all the pupils belonging to the class, and a schedule showing that the sum of the numbers of names in all the lists is identical with the number of the pupils on the school-roll. Against the name of every pupil who has already passed a standard the head-teacher shall enter in the class-list the number of the highest standard which the pupil has passed. Whenever a child more than eight years old is presented in Class P the principal teacher shall give the Inspector a written explanation of the reason for not presenting the child in Standard I., and the Inspector shall include in his annual report to the Minister a statement of his opinion with respect to the number of such cases and the sufficiency of the reasons assigned for them.

6. Against the name of any pupil who, during the three quarters preceding the quarter in which the examination takes place, has been as often absent as present, the head-teacher may write the number of the attendances of such pupil during the three quarters; and such pupil, if he do not pass for the standard for which he is presented, shall not be deemed to have failed, but shall be considered "excepted," and shall be included by the Inspector in the number of "exceptions" reported.

7. In order to obtain a pass, a pupil must be presented for a standard which he has not already passed, must be present in class during the examination in the class-subjects, and must generally satisfy the Inspector in the pass-subjects for the standard.

8. As soon as possible after the examination of a school the head-teacher shall be furnished with the names of the pupils who have passed the several standards, and shall record the passes in the Admission Register, and issue to every pupil who has passed a standard a certificate

5. The Auditor appointed to audit the accounts of any School Committee shall have access to all the books and accounts of the Committee and of its officers, and shall examine the general statement of the receipts and expenditure of the Committee, and compare the same with the accounts and vouchers relating thereto, and shall either certify under his hand that he has found the same to be correct, duly vouched, and in accordance with law, or specially report to the Education Board of the district in what respect he finds it otherwise.

IV.—Inspection of Schools and Standards of Examination.

1. Once in every year every public school shall be both inspected and examined by a Public School Inspector. If possible, there shall be an interval of some months between the inspection and the examination. As soon as possible after the inspection the Inspector shall present an "inspection report," and as soon as possible after the examination an "examination report." In these regulations a year means a year beginning with the 1st of January; and an Inspector's annual return must relate strictly to a year as thus defined.

2. The inspection report shall relate to such topics as the following:—

I. List of standard classes and teachers; II. Remarks on the organization, as shown under Topic I.; III. Suitability of time-tables; IV. Remarks on the methods and quality of the instruction in general or in detail; V. Order and discipline, and the tone of the school with respect to diligence, alacrity, obedience, and honour; VI. Supervision in recess; VII. Manners and general behaviour of the pupils; VIII. State of buildings, ground, and fences; IX. Sufficiency of school accommodation; X. Cleanliness and tidiness of rooms and premises, including outside offices; ventilation and warming; XI., &c. Other topics.

The report shall be divided into sections, and the section relating to any topic in the foregoing list shall bear the number assigned to that topic in the list. The omission of any number shall be sufficient to indicate that the Inspector does not deem it necessary to report on the topic corresponding to that number. Section I. shall in no case be omitted from the report: it shall show what "standard classes" within the meaning of Regulation 4 there are in the school, whether the standard classes are grouped in classes for instruction, and, if so, how they are grouped, and by what teacher each class is taught, describing each teacher by his position in the school as "sole teacher," "headmaster," "first assistant," "third-year pupil-teacher," or as the case may be. Any section except section I. may, if the Inspector so choose, consist of the appropriate number and of a single word, such as, "satisfactory."

3. The examination report shall show the number of pupils presented in each standard class, the number of "passes" in each standard, of failures in each class, of "exceptions" in each class, and of pupils absent from each class, the "percentage of passes," the "percentage on class-subjects," the "additional marks," and the character of the work done in classes P and S7. The terms used in this regulation shall be used in the examination report in the sense in which they are used in these regulations.

4. For the purposes of inspection and examination, but not necessarily for purposes of instruction, the pupils of every public school shall be

the subject is attended to in all the classes for which it is prescribed, and also whether it is efficiently treated. In the largest schools any neglect of these subjects is to be regarded as a ground of reproach; and, on the other hand, any good work under this head done in small schools will be accepted as evidence of praiseworthy zeal and efficiency.

13. Every Inspector shall make an annual return, showing with respect to each public school subject to his inspection the number of pupils presented, the number passed, the percentage of passes, the percentage of failures, the percentage of class-subjects, and the additional marks, and stating in brief, with respect to each school, its condition as to order and discipline, and as to the manners of the pupils. The Inspector shall at the same time make a return relating to the same schools and the same pupils, showing the total number of pupils presented in each of the standard classes, as defined in Regulation 4, the total number passed in each standard, the total number of failures in each standard, and the total number of exceptions for each standard. If possible, the return shall include a statement of the average age of the pupils on passing each standard.

14. The standard syllabus shall not be understood to prescribe to the teacher the precise order in which the different parts of any subject shall be taught, nor to prohibit the teacher from giving instruction not prescribed by the syllabus, but shall be taken to represent only the attainments of which the Inspector may expect full proof at the several stages of a pupil's progress; also it is to be understood that the examination report and inspection report, taken together, and not either of them alone, will express the Inspector's full judgment on the character and efficiency of the school.

15. The Inspector shall be at liberty to conduct the examination of a school in his own way—by written papers, or *vivâ voce;* by putting all the questions himself, or allowing the teacher of a class, or the head of a school or of a department, to put all the questions or some of them; by subjecting each pupil in a class to a separate examination, or by putting questions to the several pupils in the class in rotation, and letting them "take places" or marking the values of their individual answers; and so on. In the exercise of his judgment in such matters, the Inspector will, of course, have regard to the different characters of the several subjects, and will remember that methods properly applicable to the examination of boys and girls of fourteen may be quite out of place in the case of children of eight or nine.

16. In the interpretation of the syllabus, inspectors and teachers will be guided by the following statement of its design, and of its aims in general and in detail. It is designed to regulate the instruction and the examination of pupils in *primary* schools, most of whom are *children*, and the oldest of them in the stage of *early youth*. When terms are used in defining the subjects of primary school instruction that are also used in defining parts of an examination for teachers, it is not expected that the children will be able to attain to such a mastery of these subjects as it is necessary for their teachers to have. Questions that would be fair in a degree paper might be quite unfair if proposed in the same subject to candidates for matriculation; and the children of a third-standard class may have some useful elementary knowledge of matters that, in some aspects, are occupying the diligent attention of specialists in modern

science. The profitable instruction of children and youths is naturally limited by their intelligence—childish intelligence or youthful intelligence, as the case may be; any teaching that does not keep within the limits thus prescribed by nature is worse than useless, and examination that does not respect these limits is unreasonable. On the other hand the chief end of the instruction imparted in the primary school is the exercise and development of the pupil's intelligence, and the employment of it in the acquisition of useful knowledge. If any part of the syllabus seems to indicate a tendency to encourage what is mechanical or superficial at the expense of intelligence, it is only because, through some defect in the letter, the spirit and the real meaning have not been as clearly manifested as they ought to have been.

The subject-matter of all READING lessons, and especially of passages used as examination tests, must be such as the pupils under instruction or examination can easily understand, and the Inspector will not be satisfied with any reading that does not convey to his mind the assurance that the pupil does understand the passage read. Mere utterance of the printed words will not suffice; there must be such intonation and emphasis as are required to express the meaning and spirit of the passage: this must be insisted on, even in the first standard. Proper emphasis and tone proceed naturally from a true apprehension of the meaning, and are not acquired by following arbitrary and artificial rules. A first-standard pupil is capable of feeling the simple humour or the simple pathos of a simple story, and of understanding the point of it, and his feeling and understanding will affect his utterance as naturally in reading as in free speech, unless he has been educated into a false manner by being frequently set to read unsuitable matter, passing his comprehension and containing nothing to interest him. In the upper standards the quality of the reading affords one of the surest means of judging of the intelligence of the pupils, and of the degree of culture to which they have attained. The good readers will not be those who never read except in class, but those who have formed the habit of private reading; who can follow with ease the relations of the parts of a complex sentence, the thread of a simple argument, or the plot of an interesting story; who know how to employ in their own spoken and written composition relative sentences and concessive conjunctions: to whose understanding every turn of thought and expression appeals with familiar force; and who, because their thought and feeling respond to every reasonable demand made upon them by the writer, are able to make his meaning their own for the time being, and to make that meaning clear by appropriate tones of voice. Such readers will be independent of mechanical rules for the observance of "stops." Their reading will be rhetorical in the best sense, though not histrionic. They will be more indebted to their teacher for the correction of false habits than for the formation of a correct style, for a correct style consists chiefly in the use of turns of voice that are not conventional but perfectly natural, depending only on an adequate conception of the writer's spirit and meaning. There is no need to question really good readers to ascertain whether they understand what they are reading, except perhaps with regard to the meaning of an obscure word here and there; the good reading is sufficient proof of the intelligence of the reader. It must, however, be remembered that a child's understanding of a passage may be good as far as it goes, and may yet be naturally limited by the inexperience natural to his years, so that his reading will the subject is attended to in all the classes for which it is prescribed, and also whether it is efficiently treated. In the largest schools any neglect of these subjects is to be regarded as a ground of reproach; and, on the other hand, any good work under this head done in small schools will be accepted as evidence of praiseworthy zeal and efficiency.

13. Every Inspector shall make an annual return, showing with respect to each public school subject to his inspection the number of pupils presented, the number passed, the percentage of passes, the percentage of failures, the percentage of class-subjects, and the additional marks, and stating in brief, with respect to each school, its condition as to order and discipline, and as to the manners of the pupils. The Inspector shall at the same time make a return relating to the same schools and the same pupils, showing the total number of pupils presented in each of the standard classes, as defined in Regulation 4, the total number passed in each standard, the total number of failures in each standard, and the total number of exceptions for each standard. If possible, the return shall include a statement of the average age of the pupils on passing each standard.

14. The standard syllabus shall not be understood to prescribe to the teacher the precise order in which the different parts of any subject shall be taught, nor to prohibit the teacher from giving instruction not prescribed by the syllabus, but shall be taken to represent only the attainments of which the Inspector may expect full proof at the several stages of a pupil's progress; also it is to be understood that the examination report and inspection report, taken together, and not either of them alone, will express the Inspector's full judgment on the character and efficiency of the school.

15. The Inspector shall be at liberty to conduct the examination of a school in his own way—by written papers, or *vivâ voce;* by putting all the questions himself, or allowing the teacher of a class, or the head of a school or of a department, to put all the questions or some of them; by subjecting each pupil in a class to a separate examination, or by putting questions to the several pupils in the class in rotation, and letting them "take places" or marking the values of their individual answers; and so on. In the exercise of his judgment in such matters, the Inspector will, of course, have regard to the different characters of the several subjects, and will remember that methods properly applicable to the examination of boys and girls of fourteen may be quite out of place in the case of children of eight or nine.

16. In the interpretation of the syllabus, inspectors and teachers will be guided by the following statement of its design, and of its aims in general and in detail. It is designed to regulate the instruction and the examination of pupils in *primary* schools, most of whom are *children*, and the oldest of them in the stage of *early youth*. When terms are used in defining the subjects of primary school instruction that are also used in defining parts of an examination for teachers, it is not expected that the children will be able to attain to such a mastery of these subjects as it is necessary for their teachers to have. Questions that would be fair in a degree paper might be quite unfair if proposed in the same subject to candidates for matriculation; and the children of a third-standard class may have some useful elementary knowledge of matters that, in some aspects, are occupying the diligent attention of specialists in modern

speech of the pupils, and in their written exercises. Correct speech and good composition depend more on practice and habit than on a knowledge of rules of grammar and composition. The principal use of grammar is not to teach the art of speaking and writing correctly; that art is acquired by familiarity with good models, and by practice subject to criticism and correction; and, with respect to the acquisition of the art, the function of grammar is the subordinate function of criticism. The great value of grammar depends on its character as a science of elementary logic, as a study of the forms in which the processes of thought stand revealed. In this aspect it plays a very important part in the development of intelligence, and is pregnant with suggestions that may guide the pupil into ways of philosophical thought when his school days are over. It is, moreover, a science of classification, and among the classificatory sciences it has this advantage: that there is no need to go far afield to find the objects of it; they are accessible always and to every one, being the thoughts of our own minds and the words of our own lips. In grammar and analysis the Inspector will employ, as tests or exercises, plain and straightforward sentences, usually short, and words that have quite unambiguous functions.

In ARITHMETIC the tests of the work of any standard should consist of easy examples of that work, and should always comprise easy problems therein, excluding, except in the fifth and sixth standards, problems involving the use of more than one principle; and exercises intended to test skill and rapidity in the manipulation of figures should be set only in parts of the subject that are certainly familiar and easy to the pupil.

In HISTORY the pupils will not be required to learn more than about a dozen dates, or to answer questions on more than about twenty-five persons and events, for any one standard; nor will they be expected to trace the remote causes, or even to remember the proximate causes, of great events. What is wanted is a clear view of a few prominent persons and salient facts so exhibited as to afford glimpses of the conditions in which our ancestors lived at successive periods of our national history, and to establish in the mind an outline that may be filled in by later reading. A child may have a vivid idea of royal authority prone to excess, and of the status of a baron, and of the political insignificance of the common people at the beginning of the thirteenth century, without knowing the contents of Magna Charta, or all the incidents of feudal tenure. The manner in which the whole outline is treated in the definition of history for the third standard is an indication of the bold and general treatment contemplated by the Department in prescribing periods for study in the later standards.

The ELEMENTARY SCIENCE prescribed in the syllabus is called "elementary science" because that term is used in "The Education Act, 1877;" its scope is often misunderstood by critics of the Act and of the syllabus, who think that the children are being "crammed with all the 'ologies." But the term is to be taken as denoting such a knowledge of conspicuous natural phenomena as constitutes a general basis of the particular knowledge of separate sciences. Children are capable of understanding why a scientific man does not regard a whale as a fish, or a spider as an insect. A few well-chosen experiments will suffice to give them a definite idea of the difference between chemical combination and mechanical mixture. A few other experiments with a cheap and simple galvanic battery and an electro-magnet will afford means of explaining to them in a very useful if not a very complete way the operation of the electric telegraph. Instruction of this kind suited to their present stage of development will serve to enlarge their conceptions of the world and to quicken their intelligence—perhaps to stimulate a profitable curiosity, and to create in some young minds a bias towards scientific pursuits. Ohms and volts, atomic weight, the vascular system, and such high matters in general, are out of the reach of the ordinary primary-school pupil, however desirable it may be that the teacher have some real knowledge of them.

In examining in elementary science, or in the subject-matter of object lessons and natural-history lessons, or in geography and history, the Inspector may, if the teacher presents a book containing the notes of the lessons that have been actually given, base his examination on the contents of the note-book. He may also inspect any exercise-books in which the pupils have entered composition exercises founded on the lessons they have received on these subjects.

In GEOGRAPHY the Inspector may require the children to point out on the map the places that they ought to know, and this with respect not only to places named in their geography lessons, but also with respect to places referred to in the lessons on history, on animals, on natural products, and on manufactures. The importance of bringing the several parts of the school course into mutual relation in this way cannot be over-estimated; the degree of success attained by the principal teacher in his endeavours to establish such a correlation of parts should weigh heavily with those who are called upon to form an estimate of his skill and efficiency, and upon it will depend in a high degree the development of the intelligence of his pupils.

17. It is to be remembered that in many ways the examination of a school has an important bearing on the morals of the children. They should be made to feel and understand that the Inspector is not a severe and frowning critic bent on probing their ignorance and finding opportunity to put them to shame, but that he comes as a courteous and gentle friend, who will use his best skill to put them at their ease, and will invite them to give him proof of their diligence and let him see what progress they are making; and they should be taught to despise all showy tricks and arts of evasion, to show themselves frank and simple, and to avoid everything that is not in accordance with the strictest principles of honour.

18. The syllabus of pass-subjects, class-subjects, and additional subjects for each of the standards shall be the following:—

STANDARD I.

1. PASS-SUBJECTS.

Reading and Comprehension.—Short stories, fables, verses, &c., well within the comprehension of the youngest readers, and not containing rare words or long words. As a rule the words of more than one syllable should be only such as are formed by inflection from short words, or names of familiar objects—persons, well-known animals, birds, rooms, meals, &c. The children must be able to read the sentences with intonation indicating a sufficient grasp of the meaning.

Spelling.—Easy words of one syllable, and longer words in most familiar use and of quite regular formation (*sister*, for example, but not *daughter*).

Writing.—The small letters and the ten figures, on slate, at dictation.

Arithmetic.—Counting, and oral addition by twos, threes, fours, and fives, up to 100; numeration and notation to 999; addition sums of not more than three columns; multiplication of numbers not exceeding 999 by 2, 3, 4, and 5; relative values and chief aliquot parts of current English coins; and relative lengths of the yard, foot, and inch. The numeration must be applied to the addition and multiplication, and the multiplication known to be a compendious method of addition. The Inspector should satisfy himself that, within the limits of three places, the *idea* of the decimal notation is fully established. The examination is not to be confined to set sums, but must include concrete examples of a very simple kind, such as—there are 14 children in one class and 19 in another, how many are there in the two classes? or, John has 31 marbles and Thomas has just 4 times as many, how many has Thomas? or, there are 20 shillings in a pound, how many are there in £3?

Drawing.—Straight lines, rectilineal angles, simple rectilinear figures, and patterns—as defined in Regulation 20.

2. CLASS-SUBJECTS.

Object and Natural-History Lessons.—A syllabus of the year's work done to be given to the Inspector, who will examine the class upon some object or objects selected from the syllabus, or allow the teacher to examine.

3. ADDITIONAL SUBJECTS.

Knowledge of the Subject-matter of the Reading Lessons.

Repetition of Easy Verses.—Syllabus and test as for object-lessons.

Singing.—A sufficient number of easy and suitable songs in correct time and tune, and at a proper pitch.

Needlework and Drill.—See Regulations 25 and 12.

STANDARD II.

1. PASS-SUBJECTS.

Reading and Comprehension.—More difficult matter than is required for Standard I., but still well within the comprehension of ordinary children at the age of nine. The pupils will be expected to answer questions on the meaning of the more difficult words in the passage read, but not to give strict definitions. They will also be expected to show that they have understood, and that they remember the substance of the same passage.

Spelling.—Words of one and two syllables, including words containing silent letters or other peculiarities, and easy words of three syllables.

Writing.—Short words, in copy-books, not larger than round-hand. On slate: Capital letters and transcription from reading-book of Standard II.

Arithmetic.—Numeration and notation of not more than six figures; addition of not more than six lines, with six figures in a line; short multiplication, and multiplication by factors not greater than 12; subtraction; division by numbers not exceeding 12, by the method of long division, and by the method of short division; mental problems adapted to this stage of progress; multiplication tables to 12 times 12; relative values and chief aliquot parts of the ton, hundredweight, quarter, stone, and pound; relative lengths of the mile, furlong, chain, and rod.

Drawing.—The same kind of work as for Standard I., but more advanced, and with the addition of simple curvilinear forms—as defined in Regulation 20.

2. CLASS-SUBJECTS.

Geography.—Knowledge of the meaning of a map; of the principal geographical terms; and of the positions of the continents, oceans, and larger seas.

Object-lessons, and Lessons in Natural History and on Manufactures.—A syllabus, as in Standard I.

3. ADDITIONAL SUBJECTS.

Knowledge of Subject-matter of Reading Lessons.

Repetition of Verses.—Syllabus showing progress.

Singing.—Songs as before; the places of the notes on the stave, or the symbol used for each note in the notation adopted; to sing the major diatonic scale and the successive notes of the common chord in all keys.

Needlework and Drill.—See Regulations 25 and 12.

STANDARD III.

1. PASS-SUBJECTS.

Reading.—Easy reading book, to be read fluently and intelligently, with knowledge of the meanings of the words, and with due regard to the distinction of paragraphs as well as of sentences. Insufficient apprehension of the value of the paragraph is not to affect the individual pass, but the Inspector will not be satisfied with the class if he finds that this defect is general.

Spelling.—From the same book; knowledge of words having the same, or nearly the same, sound, but differing in meaning; dictation of easy sentences from the reading-book of a lower standard. Dictation is not prescribed for Standards I. and II., because of the serious danger which attaches to the dictation exercise used prematurely. If a child writes incorrectly, his visual memory is affected by his error. On the other hand, transcription is continued in this standard (under the head of writing), because it affords no excuse for mistakes, and allows the teacher or examiner to expect and demand precision; and, besides, it ensures familiarity with the use of punctuation marks and capital letters.

Writing.—Longer words and sentences, not larger than round-hand; transcription from the reading-book of Standard III., with due regard to punctuation and quotation marks.

Arithmetic.—Numeration and notation generally (one billion being taken as the second power of one million, one trillion the third power, and so on); long multiplication and long division; the four money rules, excepting long multiplication of money; tables of money, avoirdupois weight, and long measure; and easy money problems in mental arithmetic.

Composition.—Very simple exercises to test the pupils' power of putting their own thoughts on familiar subjects into words.

Geography.—The names and positions of the chief towns of New Zealand; the principal features of the district in which the school is situated;

names and positions of Australian Colonies and their capitals; of the countries and capitals of Europe; of well-known mountains; and of celebrated rivers. The mountains and rivers named in the following lists will suffice: Pyrenees, Alps, Apennines, Carpathians, Balkan, Vesuvius, Etna, Hecla; Ural, Caucasus, Altai, Himalayas, Hindu Kush, Thian-Shan; Atlas, Kilimanjaro, Ruwenzori; Rocky, Sierra Nevada, Alleghany, Popocatepetl; Andes, Cotopaxi; Australian Alps; Egmont, Ruapehu, Cook. Thames, Seine, Rhine, Rhone, Elbe, Danube, Tiber, Volga; Nile, Niger, Congo, Zambesi; Euphrates, Tigris, Amu (Oxus), Ganges, Hoang-ho, Yang-tse-kiang, Amur, Lena, Yenisei, Obi; St. Lawrence, Mississippi, Missouri, Mackenzie; Amazon, La Plata; Murray.

Drawing.—Freehand drawing of regular forms and curved figures from the flat; very elementary knowledge of degrees. (See Regulation 20.)

2. CLASS-SUBJECTS.

Grammar.—The distinguishing of the nouns, verbs, adjectives, articles, and pronouns in easy sentences. The more difficult pronouns (as the indefinite and distributive) are not to be used as tests of knowledge in this standard, but the children should be able to recognise as a pronoun any personal, possessive, or demonstrative pronoun, whether used as a substantive or as an adjective.

English History.—Such a knowledge of a few prominent persons and events distributed over the whole period from the Roman invasion, as might be imparted in twenty or thirty lessons of a simple character. Lessons explanatory of historical pictures would best answer the end in view. The teacher will prepare a list of about twenty-five persons and events and about a dozen dates, and the Inspector will ask simple questions to ascertain whether the children have retained an intelligent knowledge of the subjects set down in these lists, and will expect to find that the few dates selected are thoroughly impressed on their memory. The dates should be well spread over the whole period, and relate to very important events or crises.

Knowledge of Common Things.—A syllabus as for object-lessons in the former standards.

3. ADDITIONAL SUBJECTS.

The subject-matter of the reading lessons.

Repetition of Verses.—Syllabus showing progress.

Singing.—Easy exercises on the common chord and the interval of a second, in common time and in $\frac{2}{4}$ time, not involving the use of dotted notes; use of the signs *p.*, *f.*, *cres.*, *dim.*, *rall.*, and their equivalents; songs as before, or in common with the upper part of the school.

Needlework and Drill.—See Regulations 25 and 12.

STANDARD IV.

(The Standard of Education under Section 90 of "The Education Act, 1877.")

1. PASS-SUBJECTS.

Reading and Definition.—An easy book of prose and verse.

Spelling and Dictation suited to this stage, as represented by the reading-book in use; the dictation to exhibit a knowledge of the use of capitals and punctuation, but (at inspection) to be confined to prose.

Writing.—Good copies in a hand not larger than round-hand, and transcription of poetry.

Arithmetic.—Long multiplication of money; reduction of money, weights, and measures; the compound rules applied to problems in weights and measures; practice and the making out of bills of accounts and receipts; tables of money, weights, and measures; mental arithmetic to correspond. The weights and measures for this standard are: avoirdupois weight, troy weight, long measure, square measure, measures of capacity and time, and angular measure. The questions for "pass" must not include the difficult cases in which division by 5½ or 30¼ with a remainder is involved, but such cases may be put separately as a test of the ability of the class.

Composition. — Letter-writing on prescribed subjects; the addressing of letters and envelopes.

Grammar. — The distinguishing of all the parts of speech in easy sentences; the inflections of the noun, adjective, and pronoun.

Drawing. — Practical plane geometry and very simple applications of scales to the geometrical problems. Freehand drawing to be kept up. (See Regulation 20.)

2. CLASS-SUBJECTS.

Geography.—New Zealand: Seat of Government; chief towns of provincial districts; leading products and industries according to locality; principal ports; interprovincial transit; principal objects of interest to tourists; rough maps of the colony showing such one set of principal features (as capes, towns, rivers, mountains) as the Inspector may require. Australia: The names and positions of the colonies and their chief towns, capes, bays, and ports. The map of the world: The principal trade routes; the countries in which the principal articles of commerce are produced; the chief ports and trading centres; the oceans and great seas; the most conspicuous geographical features of the several continents. The globe: The form of the earth; the daily rotation; the annual revolution; the approximately stable direction of the axis; day and night; the seasons; the zones; meridians and the cause of the differences of local time. Although permission is granted in Regulation 19 to vary the order of subjects in the course of instruction in geography, the preparation for Standard IV. must always include accurate and efficient instruction on the effects of the inclination of the earth's axis to the plane of its orbit.

English History. — The period from the Norman conquest to the Battle of Bosworth: About twenty-five persons and events, and about twelve dates are to be selected from this period by the teacher. (See Regulation 16, and the description of the work in history for Standard III.)

Elementary Science.—As prescribed in Regulation 21 or 22.

3. ADDITIONAL SUBJECTS.

Recitation. — A list of pieces learnt, and one piece (or more) specially prepared for the examination.

Singing. — Easy exercise on the chords of the dominant and subdominant, and in the intervals prescribed for Standard III.; exercises in triple time; use of dotted notes; melodies, rounds, and part songs in common with the higher standards. [*Note.*—It will suffice if this class

take the air of the songs while the other parts are sung by the m advanced classes, and it may be useful to let older scholars lead the p in a round.]

Needlework and Drill.—See Regulations 25 and 12.

STANDARD V.

1. Pass-subjects.

Reading and Definition.—A book of general information, not necessa excluding matter such as that prescribed for Standard IV.

Spelling and Dictation suited to this stage.

Writing.—Small-hand copies in a strict formal style, and text ha transcription of verse in complicated metres, and of prose exhibiting niceties of punctuation.

Arithmetic. — Proportion; simple interest; the easier cases of vul fractions, and problems involving them; mental arithmetic.

Composition.—A short essay or letter on a familiar subject, or rendering of the sense of a passage of easy verse into good prose.

Geography.—New Zealand and Australia, as for Standard IV. map of Great Britain and Ireland: Capitals, great ports, and cities towns of more than 200,000 inhabitants, with their characteristic ind tries and geographical advantages. The map of Europe: The princi seas, gulfs, headlands, mountains and rivers; countries and their capit and great ports; geographical advantages of the several capitals ports; forms of government of the Great Powers. Physical geograph General distribution of land and water on the surface of the globe; mountain and river systems of some one continent; water-shed; forn tion of deltas. The globe: Significance of meridians and parallels of l tude; the seasons within the Arctic and Antarctic circles.

Drawing.—Drawing to scale; freehand drawing to be kept up. (Regulation 20.)

2. Class-subjects.

Grammar.—Inflections of the verb; the parsing (with inflections) of the words in any easy sentence; analysis of a simple sentence.

English History.—The period from the accession of Henry VII. to death of Queen Anne: About twenty-five persons and events, and ab twelve dates, are to be selected by the teacher. (See Regulation 16, the description of the work in history for Standard III.)

Elementary Science.—See Regulations 21 and 22.

3. Additional Subjects.

Recitation.—Of a higher order than for Standard IV.

Singing.—More difficult exercises in time and tune; strict attenti to expression marks.

Needlework and Drill.—See Regulations 25 and 12.

STANDARD VI.

1. Pass-subjects.

Reading.—A book containing extracts from general literature.

Spelling and Dictation suited to this stage.

Writing.—The copying of tabulated matter, showing bold head-lin and marking distinctions, such as in letter-press require varieties of ty (*e.g.* the copying of these printed standards, or of a catalogue showing division into groups).

Arithmetic.—Vulgar and decimal fractions; interest and other commercial rules, such as discount, stocks, partnership, and exchange; the metric system of weights and measures, and calculations with pound, florin, cent, and mil; square root, and simple cases of mensuration of surfaces; mental arithmetic generally.

Composition.—Essay or letter.

Geography.—The maps of Asia and North America: Work analogous to the work prescribed under the head of "Map of Europe" for Standard V. The map of the world: British possessions; their principal towns and leading products; with some knowledge of their relative importance, and of the forms of government of the most important. Physical geography: The principal causes of difference of climate, with illustrations.

Drawing.—Elementary solid geometry, and freehand drawing from simple models. Freehand to be kept up. (See Regulation 20.)

2. CLASS-SUBJECTS

Grammar.—Complete parsing (including syntax) of simple and compound sentences (easy), prefixes and affixes, and a few of the more important Latin and Greek roots, illustrated by part of the reading-book; analysis of easy complex sentences.

English History.—The period from the death of Elizabeth to the reign of Victoria; also the elements of social economy—that is to say, very elementary knowledge of such subjects as government, law, citizenship, labour, capital, money, and banking. (See Regulation.16, and history for Standard III.)

Elementary Science.—See Regulations 21 and 22.

3. ADDITIONAL SUBJECTS.

Recitation.—As for Standard V.

Singing.—As for Standard V.

Needlework and Drill.—See Regulations 25 and 12.

19. In geography and history, in Standards IV., V., and VI., the course of instruction and the scope of examination need not conform strictly to the order in which the several parts of the subjects are set forth in the syllabus. The principal teacher may, at his discretion, make arrangements for instructing two or more of the classes S4, S5, and S6 together as one class in either of these subjects, and may take the several prescribed parts of a subject in any order, provided that the order he adopts for either subject be clearly defined in a written programme showing that the whole of the work prescribed for that subject in the syllabus is distributed in fair proportion over a three years' course of instruction, that this programme be always ready to be produced at the request of the Inspector, and that it be strictly followed. In this programme, or in a separate programme, or in a note-book of lessons actually given, or in a text-book marked for the purpose, the teacher may indicate for the guidance of the Inspector the particular parts of the subject which have been so treated as to afford reasonable expectation that the class will be able to give evidence of having retained a solid knowledge of them. It is expressly recognised that a great part of the instruction given in any subject is illustrative, or explanatory, or connective, and also that the

aspects of a subject that have most interest for the teacher are those he will probably be most successful in impressing on the imagi and on the memory of his pupils; and, further, that where it i possible to do more than establish an outline or sketch of any depar of knowledge there are usually more ways than one of drawing th line. In history one teacher may be disposed to give promine dynastic considerations, another to military exploits, a third to developments, and so on; and in geography the thread of the instr may be mainly political, or mainly physical, or mainly commercial. Inspectors will judge in every case whether the plan adopted is intell the work done sufficient, and the instruction effective; and the accommodate their examination to any intelligent and reasonable by which the teacher seeks to comply with the requirements syllabus.

20. The drawing prescribed in the syllabus is illustrated by the parts of Blair's Colonial Drawing-book, issued by the authority Minister of Education, and is further defined in this regulation (20). work appointed to be done has a direct bearing on the industri decorative arts. In the first three standards the elementary kno of geometrical form is to be acquired; in the Fourth Standard elem practical geometry is introduced, limited to plane geometry; in the Standard practice in scale drawing is required; and in the Sixt practical geometry is extended so as to include elementary geometry. The instruments required in the work of the first standards can be obtained in Wellington for 4d. They are—a meas inches, a small set square of 45 degrees, and one of 60 degrees. F Fourth Standard a pair of dividers (cost 6d.) is necessary. Freehand dr begins in the First Standard; simple rectilineal figures, first drawn w ruler, being afterwards copied without ruler, and also drawn as dic exercises. The freehand for the Second Standard includes forms ba the circle, semi-circle, and quadrant; and in the Third Standard co curved forms of a less simple character are introduced. The Standard freehand work is to be decidedly in advance of Third Sta work. In the Fifth Standard the easier examples, and in the Standard all the examples, are to be drawn on a larger or smalle than that of the copy, and in the Sixth Standard freehand is exten as to include drawing from simple models.

In the First Standard the pupils must be able to distinguish ve horizontal, and oblique lines, to recognise such lines when they see to give the lines the appropriate names, and to draw them with rul without ruler at dictation. They must know that when two lines one another four angles are presented to view, that the size of the is independent of the length of the lines, that one pair of angles m larger than the other pair, that when there is no such inequalit angles are said to be right angles and the lines are mutually pe dicular, that in this case any two segments containing one of the angles form also a "square" corner, that a horizontal line is pe dicular with respect to a vertical line, that the obtuse and the angles are respectively greater and less than the right angle, and two lines without mutual inclination are parallel. Strict scie definitions will not be demanded, but the pupils must be able t and apply the several geometrical terms required, and to give ap mate verbal explanations of their meaning. They should also know how to draw lines parallel or perpendicular to one another by means of set-square and flat-ruler. Proceeding to simple geometrical figures, which should be illustrated by models in cardboard or wood as well as by drawing, they should know the square and the oblong as square-cornered figures of four sides, all the sides being equal in the square, while in the oblong there are two long sides equal and two short ones equal. The pupils should draw these figures with sides of prescribed length. The meaning of diagonal must be known, as also of triangle, equilateral, isosceles. The two triangles into which a diagonal divides a square or oblong must be recognised as right-angled triangles, and in the square as isosceles triangles. So far as is possible without strict geometrical construction the pupils must be able to draw at dictation, with ruler or as freehand exercises, the several kinds of triangles here named, as well as to recognise them. "Base," "apex," "altitude," as applied to isosceles triangles, should be known. The drawing exercises, with and without ruler, must include combinations of straight lines forming borders and simple patterns.

In the Second Standard the freehand drawing is to include forms based on the circle, semi-circle, and quadrant. The knowledge of terms—tested by models, by diagrams, and by dictation—must include circumference, radius, diameter, arc, chord, segment, semi-circle, and quadrant. The rhombus and the rhomboid are to be studied: the rhombus, as like the square, except as to its angles, and the rhomboid as similarly comparable to the oblong; the rhombus as divided by one diagonal into two obtuse-angled triangles, and by the other into two acute-angled triangles, all isosceles; and the rhomboid as divided by one diagonal into two obtuse-angled triangles, and by the other into two acute-angled triangles, two at least of the triangles being scalene.

In the Third Standard the new figures for study are the trapezium and the polygon, especially the regular hexagon and regular octagon. It is to be known that any regular polygon may be divided into isosceles triangles (equilateral in the hexagon), each of which has its apex in the centre of the figure. The right angle is to be known as an angle of 90 degrees; the sum of the angles round a point as equal to four right angles or 360 degrees; the sum of the angles of a triangle as 180 degrees (illustrated by folding a triangular piece of paper so that the three corners may meet at a point in one of the sides); and the sum of the angles of any four-sided figure as 360 degrees (illustrated by tearing off the four corners of a trapezium and putting them together at a point). The work of the standard must include ruling, freehand, dictation, and memory exercises on the geometry of form, and the freehand from set copies must include some curves more difficult than such as can be produced by joining quadrants together.

In the Fourth Standard the freehand drawing is to be more advanced than that of the Third Standard. The definitions are to be given in strict geometrical language, and are to include, in addition to all the terms used in the first three standards, the pentagon, heptagon, decagon, dodecagon, ellipse, major, and minor axes and foci. Practical use is to be made of set-squares in the drawing of lines at angles of 90, 60, 45, 30, 15 degrees, and others depending on these; and the pupils must be prepared with at least thirty problems of practical construction. They ought also to be able to work the problems from given dimensions to one or other of the following scales: 3in., 1½in., or ¾in. to a foot; ¾in. to a yard (¼in. to foot); 1in. to a mile (⅛in. to furlong). The problems required are the following:—

To bisect a given straight line or an arc.

To bisect a given angle.

To draw a perpendicular to a given straight line at a given point on it.

To draw a perpendicular to a given straight line from a given point outside it.

To draw a line parallel to a given straight line at a given distance from it.

To draw a line parallel to a given straight line through a given point.

To make an angle at a given point in a given line equal to a given angle.

To divide a given straight line into any number of equal parts.

To divide a given straight line proportionally to a given divided line.

To divide a circle into three, six, twelve, four, or eight equal parts.

To construct a triangle, its three sides being given.

To construct an equilateral triangle on a given side.

To construct an isosceles triangle, the base and the angle at the apex being given.

To construct a square, the side being given.

To construct a square, the diagonal being given.

To construct a rectangle, the sides being given.

To construct a rectangle, the diagonal and one side being given.

To construct a rhombus, the diagonal and side being given.

To construct a rhomboid, the sides and one of the angles being given.

To construct a trapezium equal to a given trapezium.

To construct a triangle on a given base and similar to a given triangle.

To construct a rectangle on a given side and similar to a given rectangle.

To enlarge or reduce any given figure by a system of squares.

To divide a circle into any number of equal parts (by construction).

To construct any regular polygon on a given line.

To construct an ellipse by pins and string.

To describe a circle through three given points.

To inscribe a circle within a given triangle.

To describe a circle with a given radius to touch two converging lines.

To describe a circle with a given radius to touch a given straight line and a given circle.

For the Fifth Standard pupils must be able to make their own freehand sketches of some common object as a preliminary to scale-drawing, to measure the object and note the measurements on the sketch, and then to draw the object to scale. Progress in freehand must be shown, and the simplest exercises of the year must be drawn either larger or smaller than the copy set.

In the Sixth Standard all copies made from the flat must be enlarged or reduced, and the freehand drawing must include drawing from simple models, the models being the same simple solids as are prescribed for the geometrical drawing of this standard, and combinations of the same as found in simple common objects, such as tables, boxes, books, bottles, buckets, &c. The model drawing and the method of teaching it are fully illustrated in the first-grade model drawing in the Colonial Drawing-book, issued by authority of the Minister of Education. The work in practical solid geometry is as follows: Plans and elevations of the sphere and cube, the cone and pyramid, the cylinder and prism, and slabs. Pupils must be able to give correct definitions of these solids, and to draw plans and elevations of them, and of simple objects based on them, on three planes of projection, and also to draw sections of them in any plane perpendicular to the horizontal or to the vertical plane.

21. The instruction in elementary science for Standards IV., V., and VI. shall be based on a programme, which shall be prepared by the head-teacher, to show the distribution of the subject over a three-years' course of lessons. The programme must include such elementary knowledge of physics, and such a conception of chemical action, as may be imparted by the proper use of Professor Bickerton's "Materials for Lessons in Elementary Science," and must also include instruction in elementary mechanics, or in such elementary physiology as may be learnt from Mrs. Buckton's "Health in the House," or in botany, or some other subject recognised by the Inspector as equivalent to one of these; provided, however, that, if the elements of agricultural knowledge be efficiently taught, no other elementary science shall be required for these standards.

22. The programme of the elements of agricultural knowledge which may be substituted for the programme of "elementary science" is as follows:—

Standard IV.—(*a.*) The parts of plants, stems, leaves, roots, flowers, and fruit (with special reference to fruit-trees and agricultural plants).

(*b.*) Fertilisation of flowers and formation of seed. Storage of food in seeds, roots, &c. Germination.

(*c.*) Composition of plants. The meaning of the terms organic and inorganic. Elements and compounds. Outlines of chemistry of air and water.

(*d.*) How plants obtain their food. Function of the leaf. Decomposition of carbonic acid. Leaf-green. Importance of water to the plant. Absorption of food by the roots. Action of root hairs.

(*e.*) The soil. How soils are formed. Decay of rocks. Chemical constituents of soil. Subsoil. Humus. The soil as a source of plant-food.

Standard V.—(*f.*) Brief outline of the chemistry of the elements essential to the growth of plants. Influence of light, warmth, and moisture on plant growth. Bacteria as the cause of decay and fermentation.

(*g.*) Mechanical analysis of soils. Classification of soils. Good and bad qualities of soils. Influence of mechanical condition of soils on their fertility. Plant-food in the soil, available and dormant.

(*h.*) The objects to be obtained by tillage. Improvement in the mechanical condition. Importance of a good seed-bed. Chemical changes induced by exposure to the air. Action of bacteria, &c., in the soil. Fallows. Tillage as partly replacing manure. Water in the soil. Capillary action in the soil. Drainage. Possible loss of plant-food in drainage water. Differences in modes of cultivation for light and heavy soils. Plant-food in the soil. Exhaustion of the soil. Principle of application of manures. Principle of rotation of crops. Improvement of the soil.

Standard VI.—(*i.*) Object of manuring. General and special manures. Farmyard manure, its composition and value; its liability to ferment; management to prevent loss of value. Vegetable and animal refuse as manures. Green manuring. Plant-food most frequently wanting in soils.

Manures supplying particular kinds of plant-food. Guanos. Special manures supplying nitrogen. Bone manures. Superphosphate and other mineral manures. Action of lime on the soil.

(*j.*) The characteristics of the commoner crops—cereals, fodder-crops, root-crops. Habit of growth of a plant. Distribution of roots. Principle of adaptation of manures to crops.

(*k.*) Importance of good seed. Propagation of plants by cuttings, tubers, bulbs, &c. Objects of grafting and pruning. Insect pests. Insect changes, as illustrated by the life-history of common insects. Nature of parasitic fungi.

In schools in which it is not practicable to have the work of the three standards done separately: Part I. may be taken as the work of one year; Part II. may be taken as the work of another year, together with so much of Part I. as is necessary to render Part II. intelligible to beginners; and Part III., with the most necessary portions of Part I., as the work of a third year.

23. The object-lessons and lessons on natural history, manufactures, and common things, for Standards I., II., and III., are intended as an introduction to the elementary-science lessons for the higher standards. Classes S1 and S2, or S1, S2, and S3, may be taught and examined together in these subjects if the programme of lessons is varied from year to year, so that on the whole the work prescribed for two or three classes shall be done in two or three years, as the case may be; or S3 may be instructed in elementary science with any higher class, and even S1 and S2 may, instead of receiving lessons on objects, &c., be instructed in the elementary science prescribed for the higher standards if the instruction in elementary science is oral, illustrative, and experimental, and is, in the teacher's judgment, adapted to the capacity of the lower classes and fitted to promote the development of their faculties.

24. Any order of instruction in singing other than that prescribed in the standards will be recognised as of equivalent value if the result be good singing, sufficient theoretical knowledge, and careful training of the lower classes as well as the higher.

25. All the girls in any public school in which there is a mistress or assistant mistress shall learn needlework, and the Inspector shall judge all other work done by the girls more leniently than that done by the boys in such a degree as would be implied in reducing by 10 per cent. the minimum marks required for any examination pass. To secure full approval the needlework of the several classes must be according to the following programme:—

S1. Threading needles and hemming. (Illustration of work: Strips of calico or a plain pocket-handkerchief.)

S2. The foregoing, and felling, and fixing a hem. (Illustration: A child's pinafore.)

S3. The foregoing and stitching, sewing on strings, and fixing all work up to this stage. (A pillow-case, or woman's plain shift, without bands or gathers.)

S4. The foregoing and button-holing, sewing on buttons, stroking, setting in gathers, plain darning and fixing. (A plain day- or night-shirt.)

S5. The foregoing, and whipping, a tuck run, sewing on frill, and gathering. (A night-dress with frills.)

S6. Cutting out any plain garment and fixing it for a junior class; darning stockings (fine and coarse) in worsted or cotton; grafting; darning fine linen or calico; patching the same; darning and patching fine diaper.

If knitting is learnt it shall be in the following order: A strip of plain knitting; knitted muffatees, ribbed; a plain-knitted child's sock; a long-ribbed stocking.

26. In case of any misunderstanding arising as to the meaning of any part of these regulations the Minister of Education may declare what is to be taken as the meaning, and his interpretation shall be binding upon all persons to whom it is communicated, and shall, if declared by publication in the *New Zealand Gazette*, have equal force with these regulations.

27. Standard IV. as defined in these regulations shall be the standard of education prescribed under "The Education Act, 1877," section **90**, subsection (4).

[*6th January, 1892.*]—Notwithstanding anything contained in an Order in Council made on the twelfth day of October, one thousand eight hundred and ninety-one, the Inspectors of Schools shall so conduct their examinations of schools during the first six months of the year one thousand eight hundred and ninety-two as to afford the pupils an opportunity of passing their standards as those standards are defined in the regulations that are superseded by the aforesaid Order in Council; and with respect to the new requirements in drawing the Inspectors shall not exact full compliance at any time during the year one thousand eight hundred and ninety-two, but they shall report any cases in which they consider that there has not been a reasonable endeavour to comply with the requirements.

V.—School-books.

1. Subject to such restrictions as the Education Board of any district may impose, any books described in the following list may be used in any public school:—

Reading.—Nelson's Royal Readers and Sequels; Chambers's English Readers and Graduated Readers; Macmillan's Readers, Globe Readers, and Shorter Globe Readers; Blackie's Graded Readers; Longman's New Readers; "Standard" Readers (Blackwood's Educational Series); "Southern Cross" Readers; Palgrave's Children's Treasury of English Song (Macmillan); Blackwood's School Recitation-books; Yonge's Book of Golden Deeds (Macmillan); Richardson's Temperance Lesson-book; First Step to Temperance (National Temperance Publication Dépôt, London); Pope's Native School Reader (Government Printer); Russell's Manual of the Duties of Life.

Writing.—Vere Foster's, Darnell's, and Marcus Ward's Copybooks, the Public School Copybooks, the "Southern Cross," and the New Zealand Public School Copybooks.

Arithmetic.—Colenso's Shilling Arithmetic, School Arithmetic, and Examples; Chambers's Arithmetic, and Examples: Nelson's Royal Series; Barnard Smith's Shilling Arithmetic, and School Arithmetic; Hamblin Smith's Arithmetic; Blackie's Comprehensive Arithmetic; Goyen's Complete Arithmetic for Standard III., Problems for Standard III., and Exercises in Compound Rules (Wise, Dunedin); Lee's Arithmetic for Standard I. (Hughes, Wellington).

Grammar and Composition.—Abbott's How to Tell the Parts of

Speech, and How to Write Clearly; Allen and Cornwell's English Grammar, and Grammar for Beginners; Bain's Smaller Grammar; Chambers's Introduction to Composition; Hall's Primary Grammar; Mason's Grammars; Meiklejohn's Standard Grammar (Chambers); Morell's English Grammar; Morris's Primer (Macmillan); Morrison's English Grammar Initiatory Grammar, and First Book of Composition; Nichols's Composition Primer (Macmillan); Park's Composition (Coulls and Culling Dunedin); Smith and Hall's English Grammar; Trotter's English Grammar (Collins).

Geography.—Marcus Ward's Child's Geography; Blakiston's Glimpses of the Globe (Griffith and Farran); Longman's School Geography (by G. C. Chisholm); Nelson's, Blackie's, Blackwood's, and Longman's Geographical Readers; Mackay's Outlines, and Intermediate Geography, and Elements; Cromwell's School Geography, and Geography for Beginners; Petrie's First Geography, and New Zealand Geography (Wise, Dunedin); Mason's New Zealand and Oceania (Upton, Auckland); Bowden's New Zealand Geographies; Patterson's New Zealand and Australia (Whitcombe and Tombs, Christchurch); Hill's Geography for New Zealand Standards II., III., IV. (Whitcombe and Tombs); Wilkins's Australasia; Proctor's Elementary Physical Geography (1s. 6d., Longman); Hughes's Geographies.

History, &c.—Miss Bourke's Little History of New Zealand (Robertson, Melbourne); Wallace's Manual of New Zealand History (J. H. Wallace, jun., Wellington); Chambers's Historical Readers; Nelson's Pictures of English History; Nelson's "The Royal Story-book of English History;" Blackwood's Historical Readers, and Short Stories; Smith's Primary History; Petrie's History for Standard III.; Gardiner's Outline of English History; the Shilling History of England (introductory to "Epochs"); Collier's History of the British Empire; Edith Thomson's History of England; Mrs. Fawcett's Lessons in Political Economy, and Tales in Political Economy; Pope's "The State" (Government Printer); National Society's Political Economy Reading-book; Moss's School History of New Zealand.

Science and Domestic Economy.—Berner's First Lessons on Health; Buckton's Health in the House; Huxley's Physiography; Johnston's Catechism of Agricultural Chemistry; Tanner's Alphabet of Agriculture, and First Principles, and Further Steps (Macmillan); Principles of Agriculture (Blackie and Son); Nelson's Science of Home Life (3 volumes in "Royal" Series); Questions and Answers upon Ambulance Work (Baillière and Co., London).

Drawing.—The Colonial Drawing-book (Simpson, Christchurch), issued by authority; "Drawing-book for Standard I.," and "Drawing-book for Standard II." (Lyon and Blair, Wellington), by authority; Hutton's New Zealand Drawing-book (Horsburgh, Dunedin); Seager's Art Drawing-books (Whitcombe and Tombs, Christchurch).

Singing.—Crampton's Twenty-four School Songs; Curwen's Standard Course, and Blackbird, and his other Tonic Sol-fa publications; Child's Garland of Action Songs; Gill's Movement Plays, and Calisthenic Song-book; Philips's Action Songs; Stimpson's Singing Class-book.

2. The Minister may, on the application of the Education Board of any district, grant authority for the use in such district of any book not contained in the foregoing list.

VI.—Teachers' Certificates.

1. There shall be five classes of certificates, distinguished (from the highest to the lowest) by the letters A, B, C, D, E.

2. In each class there shall be five divisions, distinguished (from the highest to the lowest) by the numbers 1, 2, 3, 4, 5.

3. The class for which a certificate is granted shall depend upon attainments in learning as proved by examination; the division in the class upon experience and practical skill in the art of teaching and of school-management.

4. The relative value of certificates shall depend in equal degree upon attainments in learning and upon practical skill, as indicated in the subjoined scale, in which the letter and number denoting any one certificate stand opposite to the letter and number which in any other column denote a certificate of equal value.

Scale of Comparative Values.

A1	...	...	...	...	1st Rank.
A2	B1	...	...	...	2nd "
A3	B2	C1	...	...	3rd "
A4	B3	C2	D1	...	4th "
A5	B4	C3	D2	E1	5th "
	B5	C4	D3	E2	6th "
		C5	D4	E3	7th "
			D5	E4	8th "
				E5	9th "

5. A certificate shall not be granted to any candidate who has not given proof of having been regularly engaged in teaching for at least two years in a public school or schools, or in some school or schools subject to Government inspection, in New Zealand or elsewhere: Provided that the Minister of Education may estimate a period spent in teaching in other schools than those described in this regulation as equal to a shorter period of service in a public school; and that a period spent in a normal school by a student in training shall be regarded as equivalent to an equal time spent in teaching.

6. A certificate shall not be granted to any candidate until an Inspector of Schools has testified to the candidate's practical efficiency by awarding at least two marks, according to the scale of marks defined in Regulation 19.

7. A certificate granted to a candidate under the age of twenty-one years shall be a provisional certificate, which may be exchanged for an ordinary certificate when the candidate has reached the age of twenty-one.

8. A certificate shall not be granted to any person who does not produce sufficient evidence of good moral character and of freedom from all such physical defects as are incompatible with efficiency in teaching, and in the management of a school, nor shall any person be admitted to examination under these regulations without producing such evidence.

9. A certificate shall not be granted except after examination held in

accordance with these regulations, or after proof of the passing of equivalent examination held by some sufficient public authority; prov that a partially equivalent examination may be recognised *pro tanto*, supplemented by such further examination as the Minister of Educa may order, and that the Minister shall be the judge of the value t assigned to examinations proposed for acceptance as equivalent or pa equivalent.

10. A candidate who has served four years as a pupil-teacher, or been a student in a teachers' training-college for one year, may be amined without regard to age; but, with this exception, every candic for examination must give evidence of having reached the age of ninet years, and, with the same exception, every candidate relying on an e valent examination must give evidence of having reached the ag nineteen years before the time of such examination.

11. The examination for Class E shall include the following jects:—

Reading, writing, spelling, English grammar and composition cluding punctuation), arithmetic, geography, English hist elementary science (as hereinafter defined), vocal music, draw and the art of teaching and school-management.

Women shall be examined also in needlework, and, in considera of this addition to their list of subjects, will be allowed to s stitute the laws of health and domestic economy for element science if they choose to do so. They will also be permitted pass in arithmetic on somewhat easier terms than men.

The papers for this class, with the exception of the papers on art of teaching and school-management, and in elementary scie and domestic economy, will be based generally on the progran of public school standard work; but, as compared with pa set for examination in standards, will be so much more diffi as the comparative maturity of the persons examined ren reasonable and proper.

Geography will include the form and motions of the earth; phenomena of day and night and of the seasons; the real si ficance of the polar circle, tropics, and equator; the elementary parts of physical geography; the general topogra and political geography of the world (without minute det and map-drawing, from memory, of the hemispheres, the tinents, Great Britain and Ireland, and New Zealand.

In English history a fair knowledge of the period from 1603 to 1 will be required; and a cursory knowledge of the chief ev prior to 1603.

12. The examination for Class E in elementary science will be ba upon the following programme:—

Fundamental Ideas of Matter and Energy.—Three States of Matt Mass—Inertia — Force — Momentum — Acceleration—Energy—" Cen fugal Force."

Conditions of Matter.—Compactness — Porosity— Hardness—Brit ness—Toughness— Malleability—Ductility—Tenacity—Flexibility—E ticity—Compressibility—Viscidity—Liquidity—The Gaseous State— fusion—Solution—Crystallization.

Gravitation.—Weight—Density— Specific Gravity — Flotation —

loon—Pressure of Liquid Column—Level—Pressure of Air—Barometer—Pump—Siphon—Diving-bell—Falling Bodies—Work—Laws of Gravitation.

Mechanical Powers.—Lever—Wheel and Axle—Pulley—Inclined Plane—Screw.

Sound.—Echo—Waves—Velocity—Pitch—Resonance—Interference.

Light.—Propagation—Velocity—Reflection — Looking-glass — Refraction—Lenses—Prism and Colour.

Heat.—Production—Measurement of Temperature and Quantity—Expansion—Winds—Conduction—Convection—Steam—Latent Heat—Evaporation—Distillation—Radiation.

Magnetism.—Properties of Magnets—Induction—Mariner's Compass.

Electricity.—Development of Frictional Electricty—Attraction — Repulsion—Induction—Conduction — Insulation — Distribution—Lightning-conductors—Electric Machines — Simple Ways of producing a Galvanic Current —Conductors — Resistance — Heat —Electro-magnets—Magneto-Electricity—Simple Telegraphs—Telephone—Electric Lights—Chemical Decomposition.

Chemistry.—Mixtures and Compounds—Combination and Decomposition—Elements and Compounds—Affinity—The Air—Burning—The preparation, elementary properties, and simpler compounds of Oxygen, Hydrogen, and Nitrogen—Atoms and Molecules—Chief properties of Carbon, Sulphur, Phosphorus, and Chlorine—Oxidization and Reduction—Flame—Acids, Bases, and Salts—Preparation and properties of Nitric and Hydrochloric Acids—Properties of Sulphuric Acid.

Physiology and Health.—Organized Matter—Animals contrasted with Plants—Composition and nutrition of Plants—Composition and general form of the Human Body—Position and functions of the Internal Organs—Alimentation—The Blood—Circulation—Respiration—Functions of the Skin—Animal Heat—The Ear—The Eye—Ventilation—Cleanliness in person, home, and surroundings—Drainage—Temperance—Food—Clothing.

12A. In the examination for a teacher's certificate of Class E, a candidate may, if he give notice when he applies to be examined, substitute for "elementary science" the elementary knowledge of agriculture, as defined in the following syllabus:—

(*a.*) The parts of plants, stems, leaves, roots, flowers, and fruit (with special reference to fruit trees and agricultural plants).

(*b.*) Fertilisation of flowers and formation of seed. Storage of food in seeds, roots, &c. Germination.

(*c.*) Composition of plants. The meaning of the terms organic and inorganic. Elements and compounds. Outlines of chemistry of air and water.

(*d.*) How plants obtain their food. Function of the leaf. Decomposition of carbonic acid. Leaf-green. Importance of water to the plant. Absorption of food by the roots. Action of root hairs.

(*e.*) The soil. How soils are formed. Decay of rocks. Chemical constituents of soil. Subsoil. Humus. The soil as a source of plant-food.

(*f.*) Brief outline of the chemistry of the elements essential to the growth of plants. Influence of light, warmth, and moisture on plant-growth. Bacteria as the cause of decay and fermentation.

(*g*.) Soils: Mechanical analysis of soils. Classification of soils. G and bad qualities of soils. Influence of mechanical condition of soil their fertility. Plant-food in the soil, available and dormant.

(*h*.) Tillage: The objects to be attained by tillage. Improvemen the mechanical condition. Importance of a good seed-bed. Chem changes induced by exposure to the air. Action of bacteria, &c., in soil. Fallows. Tillage as partly replacing manure. Water in the Capillary action in the soil. Drainage. Possible loss of plant-foo drainage water. Differences in modes of cultivation for light and he soils. Plant-food in the soil. Exhaustion of the soil. Principl application of manures. Principle of rotation of crops. Improvemen the soil.

(*i*.) Manures: Object of manuring. General and special manu Farm-yard manure, its composition and value; its liability to ferm management to prevent loss of value. Vegetable and animal refus manures. Green manuring. Plant-food most frequently wanting in s Manures supplying particular kinds of plant-food. Guanos. Spe manures supplying nitrogen. Bone manures. Superphosphate and o mineral manures. Action of lime on the soil.

(*j*.) Crops: The characteristics of the commoner crops — cere fodder-crops, root-crops. Habit of growth of a plant. Distributio roots. Principle of adaptation of manures to crops.

(*k*.) Importance of good seed. Propagation of plants by cutti tubers, bulbs, &c. Objects of grafting and pruning. Insect pests. Ins changes, as illustrated by the life-history of common insects. Natur parasitic fungi.

13. The examination for Class D shall include, in the first place, following subjects as they are defined in Regulation 11: Reading, writ vocal music, drawing, and the art of teaching and school-management, (for women only) needlework. Any candidate for Class D who has pas for Class E will be exempt from examination in these subjects.

In the next place, the examination for Class D shall include Eng grammar (with spelling, composition, and punctuation), arithme geography, and English history, and the papers in these subjects shall more difficult than those set for Class E.

The examination for Class D shall also include elementary exp mental science, the programme being the same as that prescribed elementary science for Class E, but the treatment different. The q tions set will demand a knowledge of simple experiments adapted to illustration of the several parts of the programme. A list of experim will be supplied to candidates who apply for it to the Inspector-Gen of Schools.

For elementary experimental science, a candidate may, if he notice when he applies for examination, substitute the element knowledge of agriculture as defined in the syllabus for Class E. examination in this subject will be more difficult than that for Class and will demand a knowledge of simple experiments.

The examination for Class D shall include, lastly, two subjects cho by the candidate from the following list: Latin, Greek, French, Gern or Italian, algebra, Euclid, elementary mechanics, elementary phys elementary chemistry, elementary biology. The scope of the examinat in these subjects will be as follows:—In languages: Translation at si from and into the language chosen by the candidate, and questions in the grammar of the language. Algebra: To simple equations, inclusive, with easy problems. Euclid: Books I. and II. Elementary mechanics: The elements of statics, dynamics, and hydrostatics. Elementary physics: Heat, sound, light, and electricity. Elementary chemistry: The non-metallic elements, and the atomic theory. Elementary biology: Elements of animal physiology; *or*, elements of the morphology and physiology of flowering plants, including the main characteristics of the chief native and introduced natural orders: the paper will contain questions on both branches (zoology and botany), but a candidate will not be required to answer questions on both. Any candidate for Class D who has passed the Matriculation Examination or the Junior Scholarship Examination of the New Zealand University, being at the time of passing of the age required by Regulation 10, or otherwise qualified as that regulation requires, may be excused from examination for Class D in those subjects in which, at the Matriculation or Junior Scholarship Examination, he obtained such marks as in the judgment of the Minister of Education afford evidence of sufficient knowledge of the subjects.

14. A candidate for Class C shall be required to pass the first section of the examination for the degree of Bachelor of Arts or Bachelor of Science in the University of New Zealand; and also (unless he has already passed for Class D) to pass the whole of the examination for Class D, with the exception of the two optional subjects. (A candidate may pass the required University examination without being an undergraduate of the University.)

15. Subject to the operation of Regulations 5, 6, 7, and 8, Bachelors of Arts or Bachelors of Science of the University of New Zealand may be admitted to Class B without examination.

16. Subject to the operation of Regulations 5, 6, 7, and 8, graduates of the University of New Zealand in first- or second-class honours may be admitted to Class A without examination.

17. An examination for the two Classes D and E, and, if necessary, for higher classes also, shall be held every year in the month of January, and shall begin not earlier than the seventh day and end not later than the seventeenth day of the month; and no candidate shall be admitted to the examination who does not give notice by the thirty-first day of October next before the examination, in a form to be provided for that purpose by the Minister of Education, and send with such notice a bank receipt for the sum of one pound sterling paid to the credit of the Public Account at some branch of the bank at which the Public Account is kept: Provided that a candidate in whose favour partial success has been recorded under Regulation 9 or Regulation 18 shall not be required to pay a fee for examination in a subject or subjects for the mere completion of the work of a former examination; and that the holder of a provisional certificate shall not be required to pay a fee for examination in the subject or subjects on account of which the certificate was made provisional.

18. A candidate whose work at any examination is good on the whole, but in one or two subjects is below the required standard, may be registered as having achieved partial success at the examination, and, on giving notice as required by Regulation 17, may at the next examination sit without payment of fee, to be examined only in such one or two subjects; and such candidate, if successful in such subject or subjects, shall be deemed to have passed the examination.

24. At every annual examination three prizes, of £5, £3, and £1 respectively, will be awarded in order of merit to the three candidates who are most highly commended by the examiner in drawing. The prizes will be awarded without regard to the classes for which the winners are candidates.

25. At every examination in elementary experimental science for Class D three prizes, of £5, £3, and £1 respectively, will be awarded in order of merit to the three most proficient candidates; and teachers who hold certificates of Class E, or who have passed the examination for that class, may compete for these prizes on condition of giving notice before the thirty-first day of October, and without paying a fee.

26. With the report of every examination for Classes D and E lists will be published containing the names of candidates who pass in any subject well enough to deserve special mention.

27. In the month of June in each year a list of teachers holding certificates and licenses shall be issued by the Minister of Education, and such list shall set forth in every case of promotion to a higher class or division the reason of such promotion; and after the publication of such list every teacher who has been so promoted shall be entitled, upon making due application to the Minister, to have a record of his promotion indorsed upon his certificate.

28. The Minister of Education shall have power to cancel any certificate or license to teach if the holder of such certificate or license shall at any time be proved guilty of immoral conduct, or gross misbehaviour within the meaning of "The Education Act, 1877," or of any subsequent Act.

VII.—Pupil-teachers.

1. Subject to the provisions of these regulations, the Board of each education district shall make its own regulations for the employment, maintenance, education, and examination of pupil-teachers, and shall submit such regulations to the Minister of Education, and such regulations shall, upon receiving his approval, come into operation, and shall not be altered or amended without his authority.

2. Any agreement already entered into between any Board and any pupil-teacher, and in force at the date hereof, shall not be affected by these regulations, or by such regulation as any Board shall hereafter make in pursuance of these regulations.

3. The regulations to be made by any Board shall include provisions to the effect that a young person of either sex, to be eligible for appointment as a pupil-teacher, must be at least thirteen years of age, of good character, of good constitution, and free from any bodily or other defect or infirmity detrimental to usefulness or efficiency as a teacher, and must have passed the examination prescribed for the Fifth Standard.

4. The regulations to be made by any Board shall also deal with the matters following:—

The nature of the agreement with pupil-teachers, whether indenture of apprenticeship or otherwise.

The term of service, and the number of hours to be spent each day in teaching.

The rate of pay.

The number of hours which head-teachers shall devote to the instruction of pupil-teachers, and the remuneration for the same.

The programme of annual examinations.

5. Notwithstanding anything to the contrary contained in these reg
lations or in the regulations made by any Education Board, a Board m
appoint any matriculated student of any university who is of suitak
character, of good health, and free from defect and infirmity detriment
to usefulness or efficiency as a teacher, to be a pupil-teacher with positi
and emolument equal to those of a third-year pupil-teacher, and und
agreement to serve a second year as a fourth-year pupil-teacher, or und
such agreement, with further agreement to serve a third year as a fift
year pupil-teacher, and on similar conditions and terms may appoint a
one who has passed the examination for Class D.

6. The Education Department will supply short examination-pape
(each for the work of an hour and a half) on composition, drawing, el
mentary science, school-method, arithmetic, grammar, geography, histor
and the optional subjects, to Boards that adopt the following scheme
examination for pupil-teachers, and that hold the examination betwe
the 15th and 20th of December :—

(*a*.) For pupil-teachers of the first and second years. In one year-
Parsing and analysis of simple sentences, and of easy compl
sentences; and, in geography, the form and motions of the eart
the phenomena of day and night and of the seasons, the re
significance of the polar circles, the tropics, and the equator, a
the most elementary parts of physical geography: and in t
alternate year—reduction, and vulgar and decimal fractions; a
history, so far as to show ability to give instruction in it to
Third Standard class.

In any year this part of the examination will be the san
for candidates of the first year as for those of the secor
year.

(*b*.) For pupil-teachers of the third and fourth years. In one year-
Parsing and analysis generally, and the derivation of words; a
general topography,. not including a knowledge of obscure a
unimportant places: and in the alternate year—arithmetic as
whole; and the history of England in simple outline.

In any year this part of the examination will be the same f
candidates of the third year as for those of the fourth.

(*c*.) For all pupil-teachers every year.—Reading, recitation, spellin
writing, and composition, together with one text-book of schoo
method (four books in four years), one of the four branches
drawing (freehand, geometrical, model, perspective), and one
the four parts into which the elementary science examinatio
for Class E is hereinafter divided.

In any year all the pupil-teachers will be examined togeth
in the same text-book of school-method, the same branch
drawing, and the same part of the elementary science examin
tion, and due notice will be given of the special work for t
year.

The elementary science will be divided as follows:—Part I.
Fundamental ideas of matter and motion, conditions of matte
gravitation, mechanical powers. Part II.: Sound, light, hea
magnetism. Part III.: Electricity, chemistry. Part IV.: Ph
siology and health.

Candidates may be excused from drawing at this examination if they attend the drawing examination for Class E every year for one branch of the subject.

(*d.*) In any year any pupil-teacher may take up one of the subjects named as optional for Class D.

(*e.*) Fifth-year pupil-teachers will be expected to present themselves at the examination for teachers' certificates.

VIII.—Normal Schools.

1. The Education Board of any district in which any normal school of training-college is situated shall have the entire control and management of such school or college, subject to the provisions hereinafter made.

2. Every normal school or training-college shall be so organized as to afford to persons of both sexes intending to become teachers in public schools the means of acquiring sufficient knowledge of the subjects which they will afterwards be required to teach, and of theories of education and methods of teaching, and also to afford to such persons sufficient opportunity of practising the art of teaching.

3. The terms of admission to any normal school or training-college shall be such as to make no distinction between applicants residing within the bounds of the education district in which such institution is situate and applicants residing in an education district where there is no such institution.

4. In the arrangement of the plan of study in any normal school or training-college regard shall be had to the opportunities of instruction offered to the students in such school or college by means of lectures in any neighbouring institution affiliated to the University of New Zealand.

5. Any Education Board having the control of a normal school or training-college may establish or maintain, in connection with such school or college, a public school to be used as a practising school, and a practising school so established or maintained shall not be subject to the control of the School Committee of the school district in which it is situate; or, the Board may agree with the Committee of any school district for the use of any public school within such district as a practising school, subject to such conditions as may be agreed upon with regard to the relations which shall in that case subsist between the principal officer of the training-college and the headmaster of the public school.

6. In every normal school the time-table shall be so constructed as to allow each student to spend five hours a week, or so much time in the year as shall be equal to five hours a week for the year, in the actual work of teaching, and it shall be the duty of the principal officer of the normal school to see that each student actually spends in the practice of teaching the amount of time so allowed.

7. Every Education Board having the control of a normal school or training-college shall frame regulations for the organization and conduct of the institution, and shall submit such regulations to the Minister of Education; and upon receiving his approval such regulations shall come into force, and shall not be altered or amended without his authority. Such regulations shall relate to the matters following:—

The number, status, salaries, and duties of the officers of the training-college;

The terms of admission to the college;

The time during which each student will be required or allowe continue at the college;

The subjects of study, and the time allotted to each (appı mately);

The arrangements for employing students in the actual worl teaching, and the proportion of time spent in such work;

The relations of the training-college and of its officer or officeı the practising school;

The organization of the practising school.

IX.—Scholarships.

1. The Education Board of any district may make regulations uı which scholarships such as are described in "The Education Act, 18 section 51, may be competed for and held; but such regulations s not come into operation until they shall have been submitted to Minister of Education, and shall have been approved of by him.

2. No regulations shall be approved of by the Minister unless they forth—

(*a*.) Whether the scholarships are open to all children of school or are to be competed for by pupils attending public schools (*see* section 51 of "Education Act, 1877");

(*b*.) Any other conditions of candidature (for example, as to age);

(*c*.) The annual value of each scholarship, the term for which it be held, and the conditions of tenure (as to good conduct diligence);

(*d*.) The subjects of examination;

(*e*.) The minimum proportion of marks in each subject, and of t possible marks, which will be necessary to qualify for a sch ship.

X.—District High School Fees.

1. At district high schools the fees payable for higher educaı within the meaning of section 56 of "The Education Act, 18 shall be eight guineas a year in the Education District of Auckla two guineas a quarter in the Education District of Hawke's Bay; pounds a year in the Education District of Grey; ten shillings a qua in the Education District of Otago; one pound a quarter for one sul alone, and ten shillings a quarter added for each additional subject, in Education District of Wellington; ten shillings a quarter for two subj and five shillings a quarter for every additional subject, in the Educa District of Marlborough; ten shillings a quarter for one subject al twelve shillings and sixpence a quarter for two subjects, or fifteen shill a quarter for three subjects, in the Education District of South Car bury; ten shillings a quarter for one subject alone, and five shillin quarter for every additional subject, in the Education District of So land.

By Authority: George Didsbury, Government Printer, Wellington.—1892.

SELECTION OF GOVERNMENT PUBLICATIONS FOR SALE.

The Aryan Maori. By Edward Tregear. Demy 8vo. 2s. 6d.

History and Traditions of the Maoris from 1820 to the Signing of the Treaty of Waitangi in 1840. By W. T. Gudgeon. Demy 8vo., cloth. 5s.

Report on the Eruption of Tarawera and Rotomahana. By A. P. W. Thomas, M.A., F.L.S., Professor of Geology and Biology, University College, Auckland. Illustrated. Royal 8vo. 2s. 6d.

Thermal Springs District of New Zealand, and the Government Sanatorium at Rotorua. By A. Ginders, M.D., Medical Superintendent. Demy 8vo. 6d.

Manual of Birds of New Zealand. By Walter L. Buller, C.M.G., Sc.D., F.R.S. Numerous plates. Royal 8vo. 10s.

Handbook of New Zealand Fishes. By R. A. A. Sherrin. Demy 8vo., cloth. 2s.

Introductory Class-Book of Botany, for Use in New Zealand Schools. By George M. Thomson, F.R.S., Science Master in the Dunedin High School. Illustrated. Demy 8vo. Cloth, 2s. 6d.; paper, 1s. 6d.

Insects noxious to Agriculture and Plants in New Zealand. By W. M. Maskell, F.R.M.S. Coloured plates. Demy 8vo., cloth. 5s.

Forest Flora of New Zealand. By T. Kirk, F.L.S., late Chief Conservator of State Forests, N.Z., &c. Numerous plates. Imperial folio, half morocco: 20s. Fcp. folio, cloth: 12s. 6d.

Indigenous Grasses of New Zealand. By John Buchanan. Full-page illustrations. Imp. 4to., half morocco, 15s.

Manual of the Grasses and Forage Plants useful to New Zealand. Part I. By Thomas Mackay. Numerous plates. Royal 8vo., cloth. 5s.

The State: Rudiments of New Zealand Sociology. By J. H. Pope, Inspector of Native Schools. Demy 8vo., cloth. 4s.

Education Acts of New Zealand. With regulations made thereunder. 1s.

The Literature relating to New Zealand. A Bibliography. Royal 8vo., cloth. 2s. 6d.

Authentic History of the Signing of the Treaty of Waitangi, New Zealand, 1840. By W. Colenso, F.R.S., F.L.S. Demy 8vo. 1s.

Materials for Lessons in Elementary Science. 1. Water; 2. Air; 3. A Candle. Demy 8vo. 1s.

Geological Survey of New Zealand: Reports for 1879–80, 1881, 1882, 1883–84, 1887–88, and 1888–89. Royal 8vo. 2s. 6d. each.

Maps of New Zealand, North and South Islands. Royal, 2s. 6d. per pair.

Manual of New Zealand Mollusca. By Prof. HUTTON. Royal 8vo. 3s.

New Zealand Diptera, Hymenoptera, and Orthoptera. By Professor HUTTON. Royal 8vo. 2s.

New Zealand Coleoptera. Parts 1 to 4. By Captain T. BROUN. Royal 8vo. 7s. 6d.

Biological Exercises. (1 and 2 out of print.) 3. The Anatomy of the Common Mussels. 4. The Skeleton of the New Zealand Crayfishes. 1s. each.

N.B.– A discount of 25 per cent. is allowed off published price to teachers.

378.77
P15

Stanford University Libraries
3 6105 003 644 650